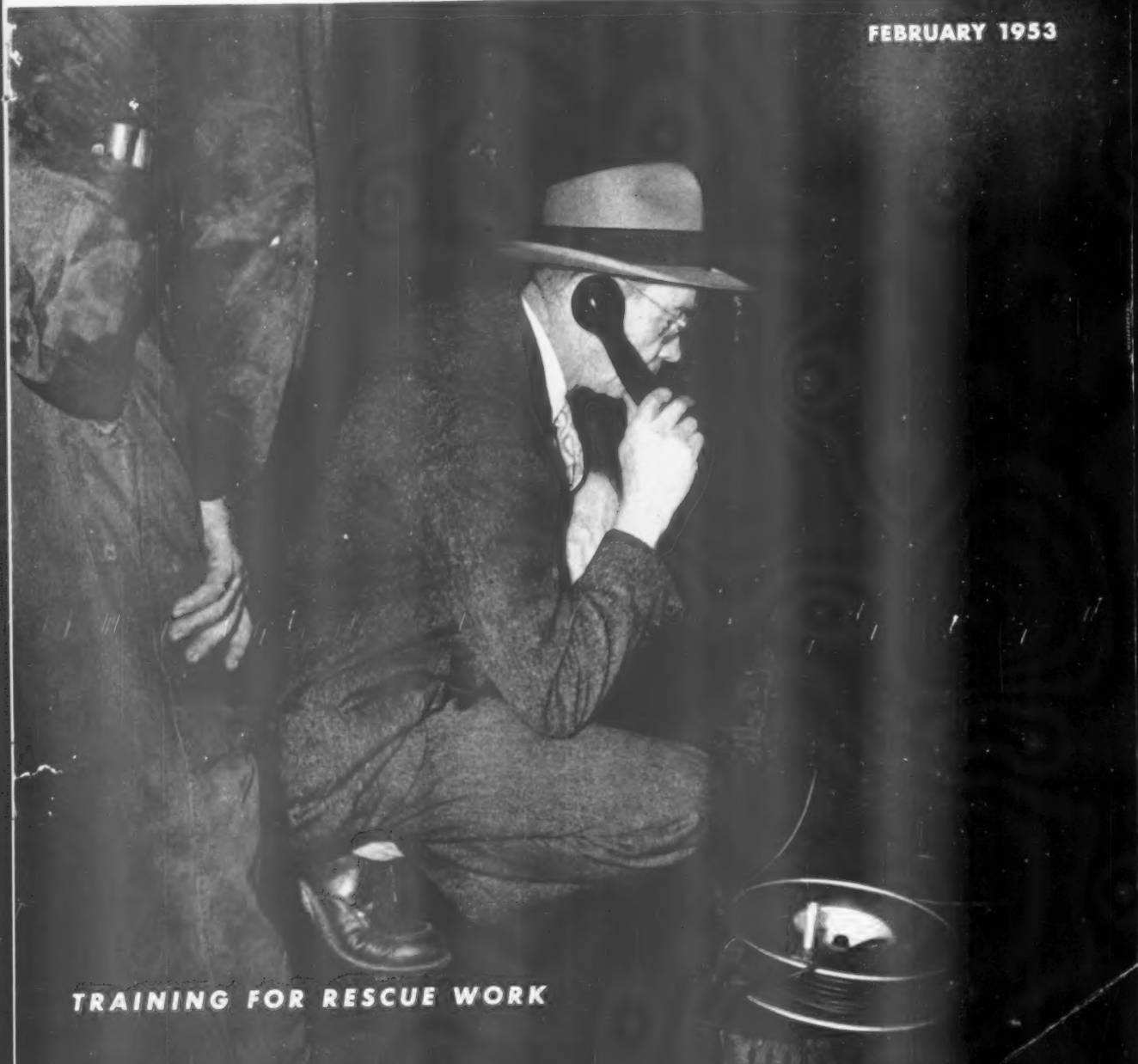


national

SAFETY NEWS

FEBRUARY 1953



TRAINING FOR RESCUE WORK

THIS MONTH

**Safety's Arctic Outpost
How Safe Are Safety Solvents?
Industry's Problem Children**

GATHERING DUST

TRAPPING DUST

WEAR

the M.S.A. DUSTFOE #55"



THE M.S.A. DUST HOOD . . .

Protects eyes, head, face and neck
from irritating or nuisance dusts

This comfortable, roomy hood keeps the wearer "under cover" in those areas where irritating or nuisance dusts are a threat to eyes, face, head and neck. Made of Dynel cloth for extra protection and wearing qualities, this hood gives the worker full job vision. The large plastic window is easily replaced if scratched or marred. The Dustfoe #55 Respirator, vinyl window, and filter are independently replaceable.

MSA
SAFETY EQUIPMENT HEADQUARTERS
MSA



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keep you on the safe side

WILLSON RESPIRATORS

WILLSON RESPIRATORS

Wearer safety and wearer comfort are the two primary considerations in designing and making Willson respirators. Styles are available to protect against metal fumes, mists, gasses, vapors and all dusts. Most styles bear U. S. Bureau of Mines approval.

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SAFETY GOGGLES



MONOGOGGLES



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National Safety News, February, 1953

national Vol. 47, No. 2

SAFETY NEWS

Published monthly by National Safety Council
FEBRUARY 1953

THE COVER: Training for rescue work. Safety Manager Milo Gray of Weirton Steel Company uses sound-powered telephone to talk to rescuer equipped with talkie gas mask in smoke and steam-filled corridor of boiler house. This type telephone is familiar to Navy vets, many of whom have used them aboard ship. Voice can carry as far as 31 miles. (Courtesy Weirton Steel Employees Bulletin).

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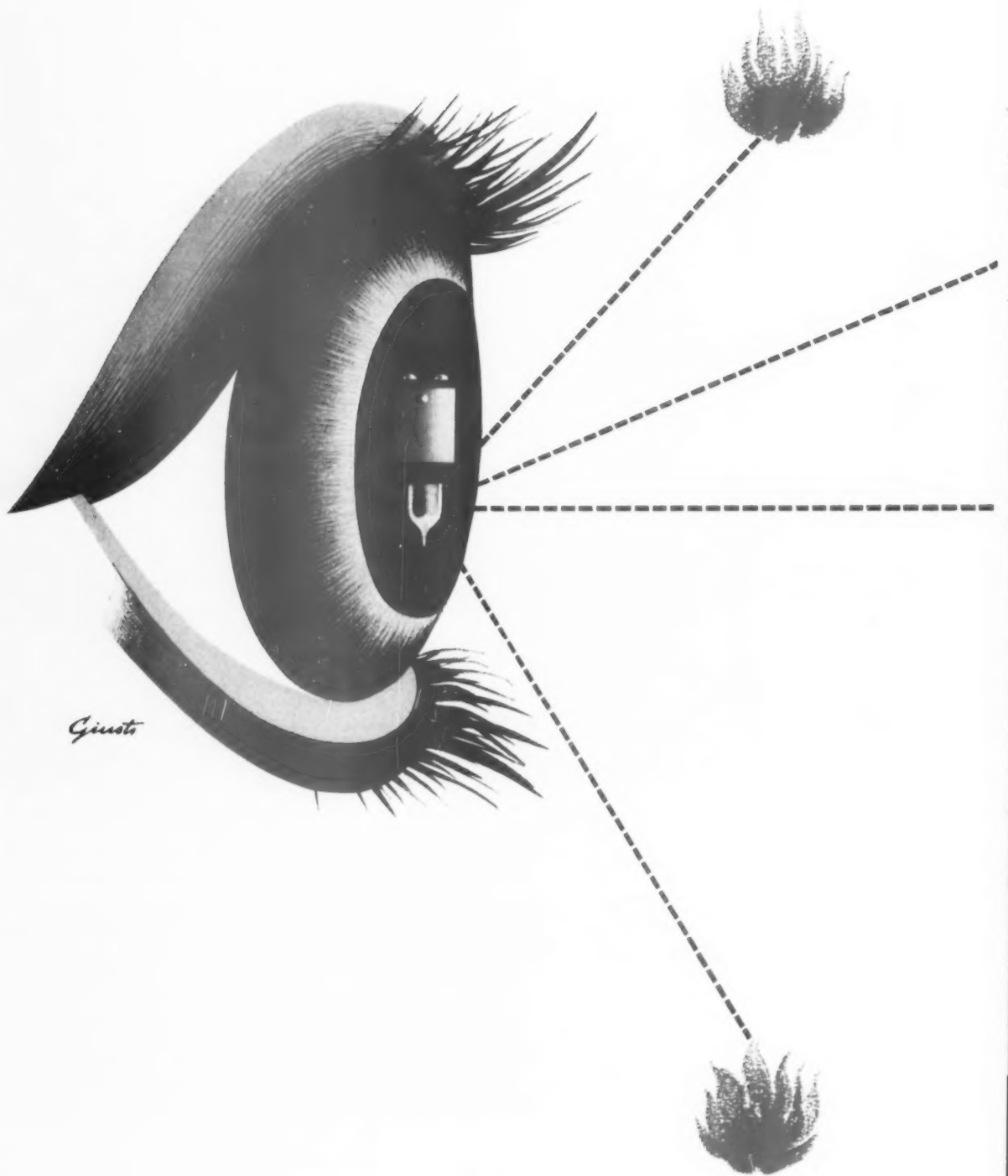
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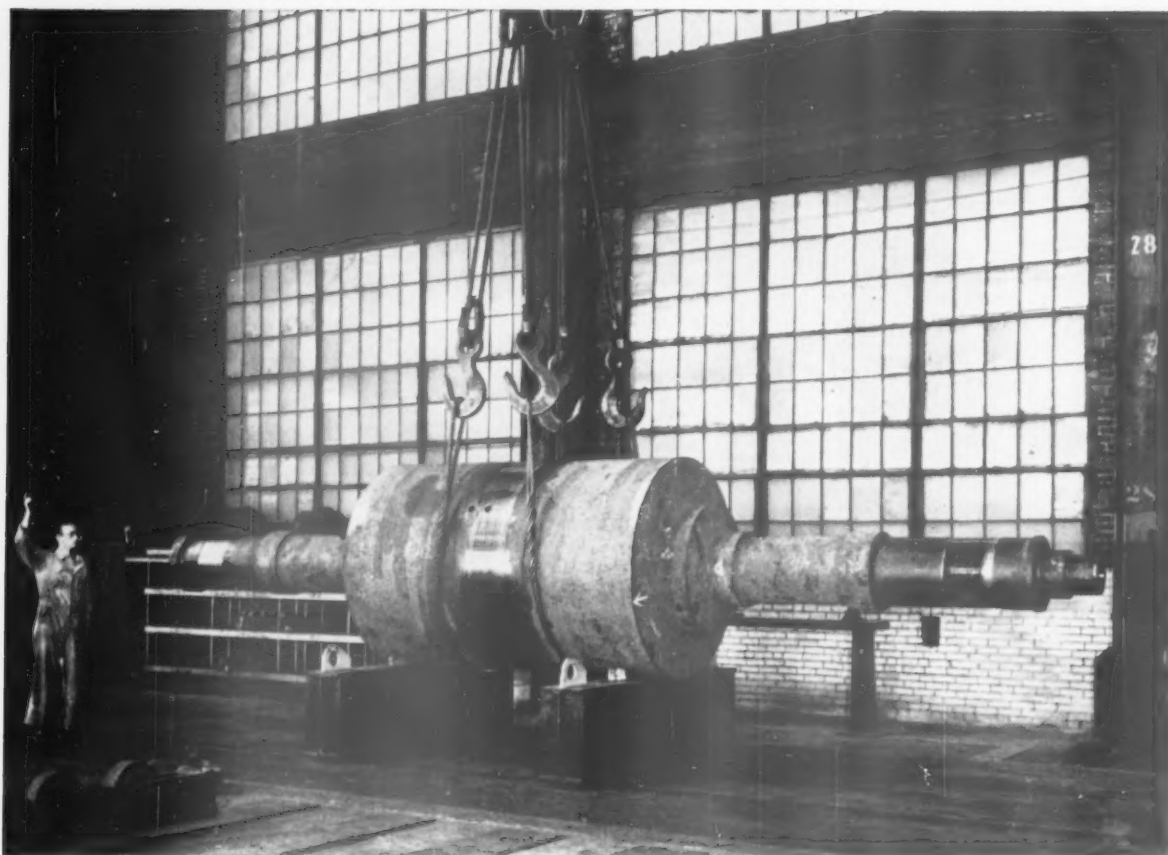
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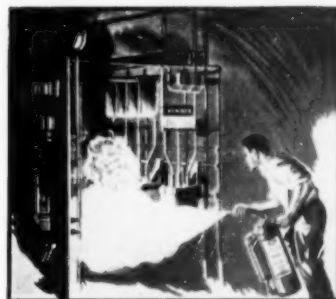
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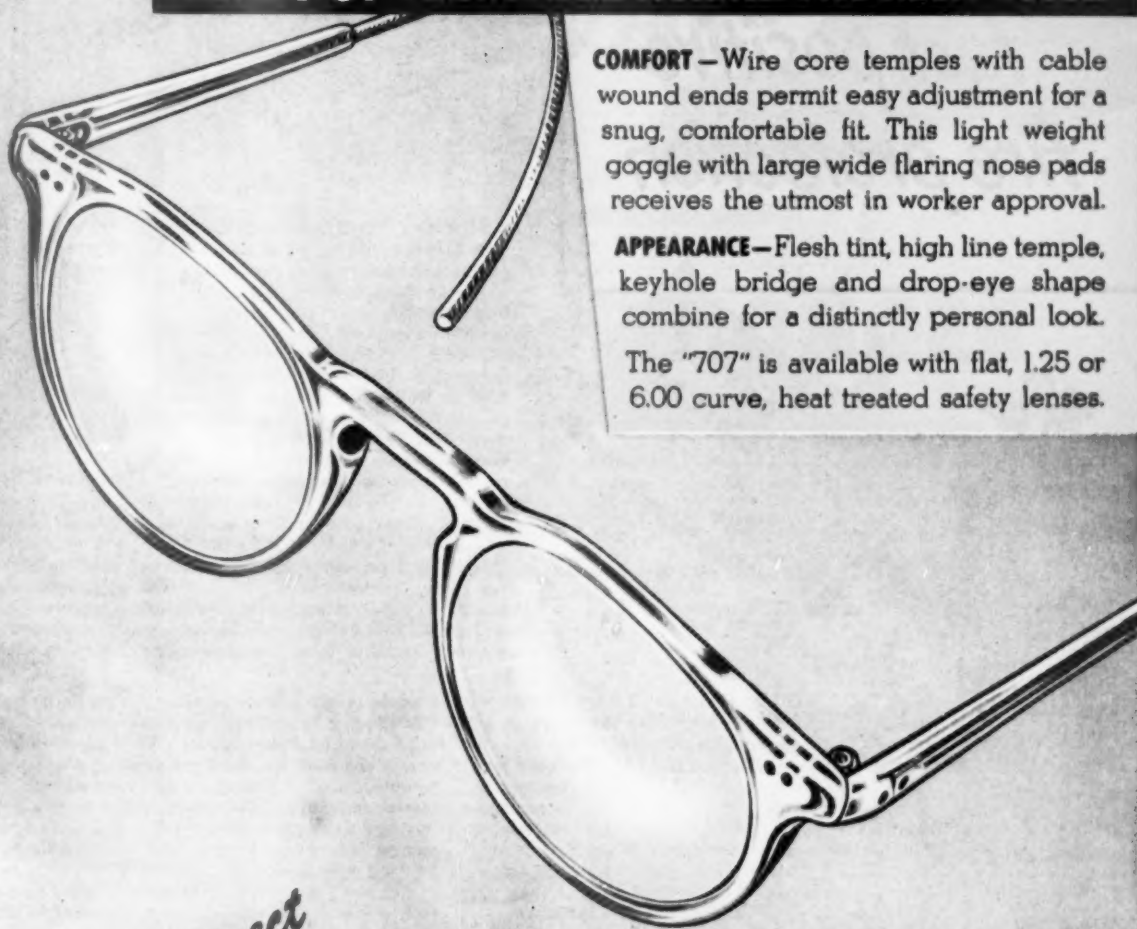
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- Neoprene Cushion Crepe soles and heels
- Neoprene Crepe soles and heels
- Non-Cord soles and heels
- Non-Cord soles and heels

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*Assure Workers' Feet
In Sure
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THE WORLD'S LARGEST SELLING SAFETY SHOE

HY-TEST SAFETY SHOES, INC.
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NEW YORK, NEW YORK, CHICAGO, ILL., PHOENIX, ARIZ.

A Message to George

THE final figures show that the American public established two new all-time records for automobile fatalities over the Christmas and New Year holiday weekends. This contrast with the many new low accident rates in industry continues to amaze me.

After all, both industrial workers and automobile drivers are people—in most cases, the same people. It seems reasonable to expect that the attitudes of safety taught to workers in industry would “overflow” into their holiday living. That they do not—at least to any appreciable degree—may be explained partly in two ways.

The first is that the attitude of carefulness taught to the industrial worker may be so closely allied in his own mind with his job that he discards it when he hangs up his work clothes, and resumes it only when he puts them back on. The second is that we may have not succeeded in teaching attitudes of carefulness at all—we may have taught only safe *procedures*.

Surely the latter explanation is only partially true, if it is true at all. Still, we ought to devise ways and means of broadening our industrial safety activities to include more emphasis on general safety habits and practices.

The situation also suggests strongly that those who have learned the value of safety education in industry probably should take a more active part in community safety work. There is a strong moral obligation to do this. But it is also good economics. Of the hundreds of motorists who were killed in traffic accidents in the two holiday weekends or who died in hospitals a few days later, a large number were workers who did not return to their jobs on the following Monday.

Someone must accept the responsibility for highway fatalities that exceed our battle fatalities. If those who have learned the value of organized safety activity in other fields will not, who will?

If you decide to let George do it, remember one thing—you are George!

Ned H. Dearborn



Full use is made of the short Arctic summer for fire protection instruction at "Operation Blue Jay." Fire, falls and frostbite are serious hazards.

Safety's Arctic Outpost

Accident prevention won against sub-zero and howling storms on this Greenland project

ON THE WEST COAST of Greenland, some 800 miles south of the North Pole, the Safety Branch of the Corps of Engineers has been engaged in a safety program unique both for its location and for the nature of the problems encountered.

The project, a highly classified job known as Operation Blue Jay, was the building of a major airport and all its surrounding features. In January 1951 the contract was let to North Atlantic Constructors, a joint venture. The hazards of the polar regions had to be overcome as well as those considered normal in construction work.

From the beginning of the whaling industry and Arctic exploration, this general area has been a graveyard of men and ships. Between 1819 and 1852 more than 200 ships were trapped and destroyed by the Melville ice. Among the ships destroyed was the *Race Horse*, which, according to the British Admiralty, was turned literally "inside out," her keel

bursting up through the deck, splitting the masts overboard like match sticks.

It was here in 1857 that the ice pack trapped an entire whaling fleet during a howling storm and ground to bits all of the ships in its path. Not only did the area present a severe challenge to the explorers of the early 19th century, but such a seasoned explorer as Capt. Robert MacMillan in the early 1920's was caught by the pack in at least two expeditions, once on the *Bowdoin* and a second time on the *Peary*.

The *Bowdoin*, a specially built and reinforced ship, was squeezed out of the water up onto the ice by tremendous external pressure. Until the start of construction at Blue Jay, the site was visited only by occasional coastal steamers supplying governmental outposts, such as weather stations and trading posts. These steamers entered the area only at the height of the summer calm, and then only after the previous year's ice was rotten and before the new ice had begun to form.

Weather conditions, such as temperatures that ranged from 60°F below zero to 60°F above zero, 150 miles-an-hour winds, snow blowing from the eternal ice cap, light conditions which ranged from 24 hours of daylight to 24 hours of darkness, were some of the factors that were expected to be encountered, and the expectations were fulfilled when the safety program for Blue Jay was set up.

As in all Corps of Engineers' projects, the responsibility for the supervising of the planning and execution of the safety program was a Corps function.

The contractor, very actively aided by his insurance carrier, planned and set into motion a very forceful safety program.

In accordance with the Corps of Engineers' concept for safety, each man on the job had safety responsibility integrated into and along with his other operational duties. In addition to each man "being a safety engineer," there are 6 full time safety engineers on the job—government, contractor, and insurance company.

It was felt that the proper way to minimize the safety risk at Blue Jay was to be highly selective in

the hiring of the craftsmen and supervisory help, and after they were hired, subject them to an intensive training course. In March 1951, a training course was set up at Rosemount, Minnesota, and the "faculty" consisted of a director of training, assistant director, a first aid teacher, four safety engineers, a supervisor of preventive maintenance, a labor relations supervisor, a chaplain who taught human relations, and a motion picture projectionist. The subjects taught included security, special job conditions, hygiene, preventive maintenance, first aid, use of Arctic clothing, fire prevention, and safety in production. The Training Department had available to them, for their use, such visual aids as films, slides, charts, and enlarged diagrams.

In addition to the Training Department, a Testing Department was set up which consisted of a physician and several personnel experts whose specialty was placement of the right man in the right job. All types of help, regardless of title or pay grade, were subjected to a very rigid physical examination, an intelligence test, and a battery of placement examinations.

In addition to these, the skilled craftsmen were required to demonstrate their skill on the equipment they were hired to operate. For this purpose, on hand were a shovel, several tractors, a dozer, a compressor, a wagon drill, three light trucks, a large dump truck, and the various hand tools needed by the craft.

After the candidate passed all of the above tests and if his references proved satisfactory, he was further processed for overseas shipment. The further processing consisted of a series of shots, the issuing of Arctic clothing, advice

on insurance problems, and an explanation of the hours of work and the rate of pay for the individuals concerned.

Immediately upon his arrival at the job site, the workman received an additional hour's orientation and training on the safety record at that particular site and the conditions peculiar to that area.

From the moment of his arrival, to the time of his departure, the workman was subjected to an intensive safety educational and promotional campaign—through the meetings regularly conducted

by his immediate supervisor, hourly plugs on the local radio station, daily accounts in the local paper, liberal use of posters, and the constant on-the-spot advice of all the safety engineers.

In addition to the hazards encountered on the normal job, all concerned were continually advised to be on guard against the three main hazards of Arctic construction—fire, falls, and frostbite.

Because of the climatic conditions, the main hazard encountered is probably that of fire. The Fire

—To page 105

Fire at sub-zero temperatures is dreaded in all polar operations. A trained fire-fighting force with modern equipment is constantly on guard.



The medical director checks a patient at the temporary hospital at Blue Jay—the most complete hospital north of Quebec.



Emergency shelters for protection against howling storms were erected for protection of workers at this Greenland air base.





Night and day, this display at the main plant entrance commands attention. Above the illuminated board under the shelter is a large floodlighted poster.

Good Medicine for Any Plant

By D. H. TILSON

Large industries normally spend large sums of money on accident prevention programs. However, equally effective programs can be obtained in small plants with lower expenditures.

IN OUR company, and in our East St. Louis Works where we have achieved some safety records of which we are all proud, we are strong believers in the three well known standard E's of safety—Education, Engineering and Enforcement. Each requires the spending of some money, but we have become convinced that our expenditures for these purposes are good business and in the long run reduce the cost of accidents. They also do something far more important from the humanitarian point of view. Injuries prevented are beyond reckoning in dollar values.

While larger companies such as ours consider the expenditure of considerable sums of money an essential part of safety success, it is by no means the only way to this success. Small companies usually cannot have the same type of programs as the larger companies. Smaller companies cannot afford a full-time nurse, a safety director and a medical director which are often found in larger organizations, but all the same basic safety principles apply to both large and small concerns so there is no reason why small organizations should not have very effective programs. Actually, with

smaller numbers of people involved, top management should have better control and more intimate knowledge and understanding of safety programs than are usually possible in large organizations.

However, according to the U. S. Department of Labor statistics, over 75 per cent of all occupational injuries in the United States happen in plants of less than 300 employees. This was brought out at the President's Safety Conference which was held in Washington, D. C. in 1951 and it was again reiterated at the 1952 conference. From page 33 of the



D. H. TILSON is Works Manager, Aluminum Ore Company, East St. Louis, Ill. This article has been condensed from an address before the Arkansas Safety Conference, Little Rock, November 19, 1952.

1952 edition of Accident Facts published by the National Safety Council, I would like to quote some figures:

Injury rates vary from high to low as plant size varies from small to large according to the experience of manufacturing plants reporting to the National Safety Council. The experience for one year, 1949, covering nearly 3500 plants is presented in Table I.

Thus, not only does smaller business pay most of the estimated 2½ billion dollar annual cost of occupational injuries, but its workers and their families suffer most of the consequences of the 16,000 occupational deaths and 2 million occupational injuries which occur annually.

Such facts supply ammunition to those who advocate Federal safety legislation. Legislation, however, is not the answer to the industrial problem. If it were, the government, which is the largest employer in the nation, would have the best safety record.

There are many ways in which small industrial organizations can improve their safety records, even if they do not have full-time safety directors. Departmental safety meetings can certainly be held in small organizations just the same

TABLE I

Size of Plant (No. of Empl.)	Rates		Average Days Lost Per Case	
	Frequency	Severity	Temporary Total Disabilities	All Disabilities
Under 25	25.9	2.41	15	93
25 to 99	18.0	1.50	17	87
100 to 499	13.4	.95	15	71
500 and over	9.7	.75	19	79

as they can be held in larger ones. In either case, it is most important that these meetings be properly planned and conducted so that the time and money spent for these meetings is not wasted. One large company estimates that 80 per cent of its safety cost is chargeable to meeting time—so it is evident that this company believes that good and numerous safety meetings reduce injuries.

We have found from executive and departmental safety meetings which are held every month at our East St. Louis Works that we not only receive many good safety suggestions, but also our employees often submit ideas which improve operating efficiency as well. We have also found that many times when a particular hazard is removed from an operation, our efficiency has improved.

These executive and departmental safety meetings are our approach to the educational part of our Three E program. This past

summer, starting in July, we conducted a series of three conference-type programs on safety for all of our management personnel. The objectives of these conferences were to:

1. Determine the causes of human failures in safety.
2. Discuss the shortcomings of our safety program in eliminating human failures.
3. Outline our present safety program.
4. List our duties and responsibilities to the safety program.
5. Redevelop our safety program.
6. Determine how we can, as supervisors, carry out our safety program.

We were very gratified at the fine response from these meetings.

Our company has a stated and published safety policy which we all attempt to live up to. This published safety policy ties in with the second part of our safety E program—Engineering. We do believe in and practice engineer-

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Getting ready for a safe new year. Barbara Tucker of the Operating Records Department is setting the hands of the clock back to zero.

More Power to Your Words

THERE are times when we need pictures to clarify or emphasize our words. Few of us can draw acceptable pictures, and that is where the camera comes to our aid in making our teachings graphic and understandable.

This useful tool of communication is basically a simple one, although professional photographers often use a bewildering variety of complicated apparatus. With photography, as with many other hobbies, the enthusiast sometimes becomes dissatisfied with the limitations of simpler equipment and graduates to a more expensive camera and a wider variety of accessories.

There are so many ways in which simple photographic illustrations can aid the safety director in communicating his ideas to others—either up or down the line. His specially-made photographs can aid him immeasurably in his training program for increased production and greater safety. He may even use special photographs to explain new ideas for changes in method and improved processes when he offers such suggestions to his superiors.

The Safety director's immediate training problems, of course, involve his responsibility for helping operating departments in getting out production with the least possible hazard. This means that workers must understand the company's established methods and practices. These methods and practices must be both efficient and safe—but every new worker must be trained, and every older worker must be reminded of fundamentals from time to time. Here's where the camera will prove helpful.

Any physical condition, any part of any machine, or any fea-

A camera can provide the pictures that make on-the-job teaching graphic and impressive

By NORVAL BURCH

ture of the plant's physical layout and equipment can be photographed, and the pictures can be used in safety meetings and other training conferences, where details explained through such illustrations are remembered.

Take, for instance, a machine which, though equipped with mechanical guards as far as possible, still presents a definite hazard unless a certain operating routine is followed. It is impossible to bring the machine into the meeting room, but the supervisor can put across his point graphically by having trainees study enlarged photos of the parts.

"Right and wrong" photos are frequently used to train workers in job methods and safe practices. When such photos, displayed on the department bulletin board, for instance, have been taken in familiar spots around the shop, and use as models the familiar faces of fellow workers, they command the earnest attention of every member of the working force, and another important point has been put across forcibly.

If the camera is used regularly in this way, the bulletin board becomes the department's picture newspaper, and the heightened interest that follows not only will



The 35 mm. camera is easy to carry and economical to operate. With color or black and white film it is useful for making slidefilms of scenes on the job. A high speed lens and a flash gun make it possible to take action or posed pictures on the job without cumbersome or elaborate equipment. Norval Burch is shown here making an "open flash" with a camera not synchronized for action shots.

NORVAL BURCH is Editor, *The Industrial Supervisor* and Associate Editor, NATIONAL SAFETY NEWS.



Professional set-up for taking pictures on the job. A 4 x 5 press camera takes negatives that make satisfactory contact prints or clear enlargements for posters or magazine illustration, or 35 mm. slidefilms. In the above illustration a production crew from Sarra, Inc., is taking on-the-job sequences. Glenn Griffin of the National Safety Council's Industrial Department, checks the script. The picture sequence shows the safe way of operating a milling machine.

keep the crew watching the board for the latest release, but will serve to draw attention to safety posters, bulletins and messages displayed nearby.

Safety directors, production supervisors and others often use the camera to speak for them by inference, leading workers to change certain practices in the cause of safety and efficiency.

For instance, an inspection trip through the men's locker room might disclose housekeeping conditions that are something less than favorable. If a photograph is taken of this room, with a few closeups showing unsafe conditions in individual lockers, they can be posted on a board in the room itself. The pictures will be seen only by those responsible for the room's condition, but some decided changes are likely to be made—without benefit of a safety sermon.

One widely-known safety director, now retired, used to go about the many acres of his plant looking for just such conditions. When he found examples of poor housekeeping or obvious misuse of plant equipment, he took his camera and photographed the scene from an

angle that would emphasize the malpractice.

Enlargements of the photographs were posted on the bulletin board without captions. Everybody watched the board and scanned each new picture with interest. While one viewer might chuckle,

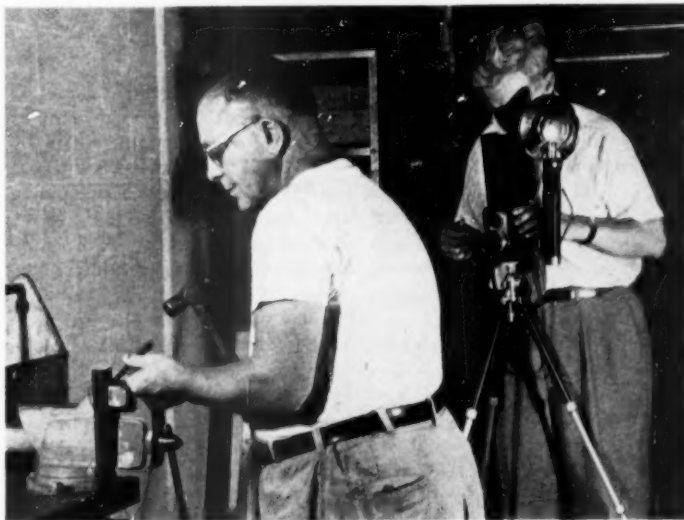
he'd remember the lesson, and the next man might turn away with a red-faced grin—but the condition usually was corrected in short order.

One advantage of the camera as a teaching tool is that we are already a picture-conscious people, and the popularity of the camera as a medium of expression has been growing by such bounds that many persons are proficient in its use. Even those who have never operated a camera but are convinced of its value can master the technique, within reasonable bounds, with no trouble at all.

Cameras that can be used to advantage around the shop range from the fairly inexpensive types to those that are quite costly, but it is not necessary to spend a lot of money in order to do the job well. Costlier cameras offer many refinements and advantages for the advanced technician, but it is doubtful whether they will make better pictures than the moderately-priced unit that is handled properly and within its limitations.

Many photo hobbyists often fill their needs from the wide selec-

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The twin-lens reflex is popular with amateurs, and some professionals, because it is possible to focus the picture on the ground glass screen. The extension hood is an aid to clear focusing, particularly when the light is overhead. Picture size is $2\frac{1}{4} \times 2\frac{1}{4}$. A tripod is desirable for exposures slower than $1/50$ second. Carman Fish is clicking the shutter, synchronized to the flash bulb by the attached cord.



The Other Side

(Fiction)

By BILL ANDREWS

February 4, 1953

A MONTH AGO I sat in Larson's office battling like mad against the principal proposal of an outside expert brought in by the front office to survey our operations. He wanted me to shift emphasis in my safety program, and I would have no part of that.

Certainly I think I was right—but some of the heat that boiled up in me was the irritation at having an outside know-it-all tell me how to do my job.

Now, just a month later, I'm involved in precisely the same kind of argument, but from the other side of the table.

We have just acquired a new subsidiary, and I'm writing this in a Chicago hotel room between

sessions with the management of the plant we've bought.

It's a 500-employee shop out on Chicago's West Side, power presses, some machine tools, heavy assembly. We've kept the old management group almost intact, except for a comptroller we've installed.

Safety has been handled by the personnel manager, who is also labor relations, welfare, insurance and office manager. The chief watchman heads the fire brigade, and is supposed to make safety inspections on his rounds. In the last three years he has reported nothing but fire hazards, and not many of them.

The personnel man says he is a safety enthusiast. Considering

the spread of his interests, he has been conscientious about it. There is a departmental injury chart in the locker room, and every year one of the monthly foremen's meetings is devoted to safety—usually a speech by some guy from their compensation insurance carrier.

The presses are guarded—not efficiently, but effectively. I can save them some money there, but I can't improve on a four-year no-amputation record.

Yet the plant's over-all accident rate, figuring it either by frequency or severity, runs about 50 per cent above the industry, and double the Jackson-Barnes rate.

Falls, material handling, these are the big frequency factors. Severity feels the sock of too many eye injuries, concentrated in the machine shop.

The personnel man explained, "We spotted that two years ago. Went to a lot of trouble trying to get the men to wear goggles. We supplied all men with goggles at our expense. Still do. We put up a lot of posters, held a mass meeting and had an optical company guy explain why they should be worn. But somehow we can't enforce it. There are always some guys in the shop who won't wear them unless we stand over them and make them."

We went for a walk to the machine shop. I can vouch for the fact that they put up the posters two years ago. The same ones are still there, grimy, faded, torn. And at each grinder a pair of goggles hung on a hook by a sign saying, "Always wear goggles when operating this grinder." The film of dust on each pair looked long undisturbed. About half the men in the shop wore goggles, including the foreman.

As we walked out, I asked the personnel man, "Have you a pair of goggles of your own?" He nodded, "Sure! Here." He pulled them out of his case and showed them to me. I held them up and saw they were prescription-ground.

Back in his office I told him, "I'm surprised as many men wear goggles in the machine shop as do.

The foremen must keep on their tails."

My man looked a little blank. "I thought you'd be sore to see so few wearing them," he said.

I let him have it. "I am sore, but I'm not surprised. Two years ago, you put in a goggle program. But you put it in the most half-hearted, lukewarm way a company could. I know the outfit that made those goggles, and I know what they proposed to you.

"They wanted to come in and survey your men, test their eyes, check the exposures. They wanted to show you how to do a real educational job. They wanted to train one of your people in fitting. They wanted to do a lot of these things.

"But you, or your boss, said, 'No.' You wanted to order some goggles in bulk, have a guy make a speech, ignore the need for corrective lenses, put up a half dozen posters, and then tell the foreman he had an eye protection program and it was up to him to make it work.

"And you, the plant's top safety officer, won't even bother to wear goggles yourself when you go into a machine shop! You won't bother, even though your glasses are properly ground, a lighter and more comfortable model than the men have."

He groused a little, but he had to admit I was right. He defended the action on cost factors and the conservatism of the top management.

I took him into his boss's office, and the boss would have no part of the idea of bursting out right at the start of new ownership relationship with a heavy expenditure on an eye program.

"Are you bucking the idea, or are you afraid of what the Jackson-Barnes brass will say?" I asked.

"Neither," he replied. "I just don't want them to think I'm squandering their money when I wouldn't spend the money of the old management."

I reached across the desk, took his phone, and called our president, Larson. Larson backed me

solidly, talking to the plant manager himself. I went out of the office with a decision my way.

I went after the falls next, and we got somewhere on that, the safety-personnel man and I—better treads on the stairs, some revision of lighting, and so on.

Finally we took up material handling. Now, I've heard industrial engineers tell me that if they want to be sure of making a quick showing in a short survey of a plant's methods, they tackle material handling first, sure that they'll find plenty to work on pronto.

Oddly enough, the usual obvious things were fairly well under control at this plant. Several things I pointed out the personnel man told me had been ordered corrected, now that Jackson-Barnes money was available for improvements. Very obviously, our industrial engineering staff had beat me to the scene.

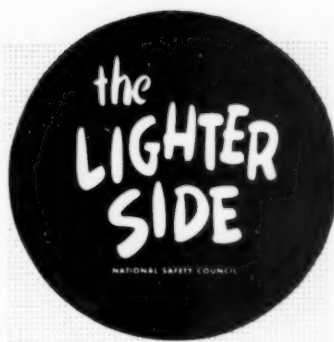
The safety man didn't have much of a breakdown on the material handling accidents, but he remembered a good many back strains and mashed toes. I noticed a couple of fire prevention posters in the shipping department, but nothing on proper lifting.

And inquiry showed there had been no pushing of safety shoes.

I suggested, naturally, some training on lifting and a campaign to promote safety shoes.

"Look," my man said. "You're probably right; we need those things. But you also know what my duties are. If I'm going to be any help on the eye program, if I'm going to follow up on your other suggestions and try to get anywhere on a regular inspection set-up, who's going to do the rest of my job? It's all right for you guys from the main plant to come down and point out all the things that are wrong with us. But I can't do everything at once, and I'd be crazy to try. Tell me what you want done first, and I'll get to the rest when that's licked. What'll it be, eyes, or feet, or backs?"

I knew the answer, all right. It was eyes, and feet, and backs



—but I also know that the guy was talking sense. Within the frame of reference of normal operation.
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Practical Aspects of Dust Suppression

PART I

By W. B. LAWRIE
M.Sc., F.R.M.S., A.I.M.

INCIDENTAL generation of large quantities of dust is a feature of many industrial processes. In some, the dust is dangerous to health; in others, although perhaps innocuous, it appears in objectionable quantities. Higher output often increases the density of the dust cloud generated, so the modern factory may aggravate the dust problem.

The term "dust suppression" includes all methods by which atmospheric dust concentrations are reduced. These methods fall into two main groups. One approach aims at prevention of dust generation. The other is directed to the control of dust clouds which have been allowed to form.

The former, which may be described as *dust elimination*, is always the better and often the more difficult method.

The latter, referred to as *dust control*, is never so good, although it may be the only practical expedient. It is, however, of great practical importance to keep in mind these fundamental differences in technique.

Dust suppression can be applied in three ways. First and best is elimination of the dusty process. The second is alteration of the process giving rise to the dust, so

that less dust is produced. This is not so good as complete elimination, but it reduces the amount of dust to be controlled, and so facilitates application of control methods. Finally, the dust cloud may be controlled after it has been allowed to form in the atmosphere.

Where no alternative is available, control methods will have to be applied. In the over-all design of a dust suppression system, however, they should always be considered last. Success often depends on the thoroughness with which the first two methods have been used, and the degree to which the actual formation of the dust cloud has been restricted before the control methods were applied.

Although local exhaust ventilation is often necessary, it is only one way of controlling dust, and in certain cases may not even rep-

resent the major feature of a good dust-suppression system.

Local exhaust ventilation is not always successful. It commonly fails to achieve its end because it has been regarded as the only method, instead of being used in conjunction with other methods of dust suppression.

One other general observation must be made. Local exhaust ventilation is employed to remove dust—not air. This requires some knowledge of the properties of the dust to be removed, and also of the manner in which it might be expected to behave. It also means that the normal method of estimating the requirements of the ventilating system, with reference to the volume of air extracted, may give an inadequate impression of the amount of dust it will remove.



Dust and smoke collector hoods behind shakeouts have a capacity of 18,000 cubic feet of air per minute. (Allis-Chalmers Manufacturing Co.)

This article, which appeared originally in the British Journal of Industrial Safety, is presented in condensed form through courtesy of the Royal Society for the Prevention of Accidents, London.

Illustrations are from industrial plants in the U. S. A. Part II of this article, which deals more specifically with local exhaust ventilation, will appear in an early issue.



Down-draft ventilation through grille-topped tables is effective in removing dust generated in the process of sanding and grinding castings.

This should not be overlooked when testing an installation. The fact that a unit extracts a sufficient volume of air per minute may not necessarily indicate that it is extracting dust satisfactorily.

Recent work implies that there is still ample scope for either fundamental or empirical developments, based on observed phenomena, and that careful aerodynamic studies may yield fruitful results.

This method of approach demands a much fuller cooperation than is often evident between the ventilating engineers, the mechanical engineers who design the plant, and the men in charge of production. If the factory is a new one, this cooperation should include the architect so that a suitable building can be erected. In these circumstances the various methods of dust suppression can be applied, either singly or in conjunction with each other.

It is important to realize, however, that such a result will be achieved only when the various dust control methods are seen in proper perspective and used in suitable coordination. If ventilating equipment is used, as it often will be, the ventilating engineer

and the production engineers of the industry concerned should appreciate each other's methods, and the difficulties and limitations inherent in these methods.

Elimination of Dust

The best way of dealing with unwanted dust is to stop making

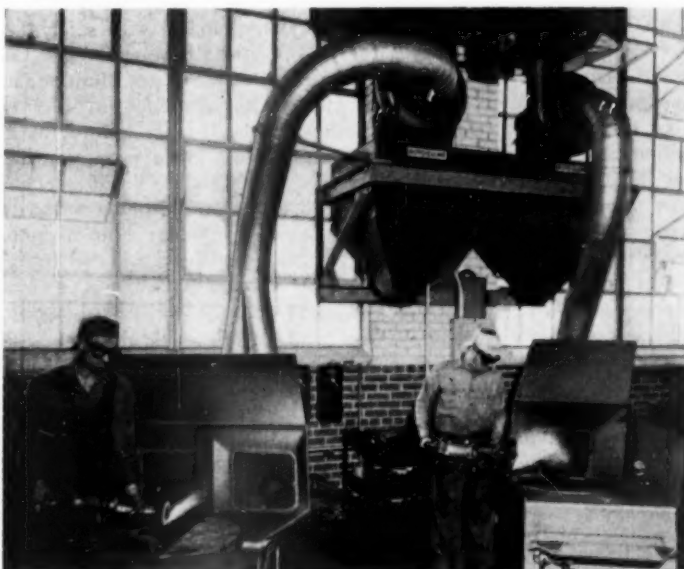
it. In general, this is by no means the simplest method of dust suppression, but it is always the best, because it provides a complete and final answer to the problem. Furthermore, it avoids the necessity for costly control appliances which may occupy an embarrassingly large amount of space and make heavy and continuous demands on the engineering staff if a reasonable state of efficiency is to be maintained.

Probably the earliest way of dealing with dust was to wet it. This may offer one method of dust elimination if it proves possible to wet the raw material before process work commences. No dust will be raised as long as the material remains wet.

While water will not wet finely divided materials, they can often be wetted if the surface tension of the water is lowered by the addition of wetting agents, giving what is called "wet water." A further advantage of wet water is that it penetrates large masses of material much more quickly.

There are, however, other ways of eliminating dust, although the

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Well designed hoods remove dust from grinding without drawing it past the worker's breathing zone. Exhausted air is filtered before it is recirculated through the workroom (American Air Filter Co.)

How Safe Are Safety Solvents?

By MELVIN Z. POLIAKOFF



Flash point test by means of Tag closed cup tester. This method is accepted for testing mobile liquids flashing below 175° F/ASTM Standard D-56-36; ASA No. Z11.24-1936; Federal Specification VV-L-791d, Method 110.1.3.



High flash naphtha sprayed in vicinity of flame. Solvent droplets ignite quickly. This flammability hazard exists in spray cleaning as well as spray painting.

BECAUSE of a number of deaths directly traceable to carbon tetrachloride, its use for general industrial cleaning has been discouraged by many health authorities. To meet the demand for less toxic solvents, a flurry of new products has appeared. The haste with which these products were put on the market has resulted in the use of incompletely tested materials.

It is no simple problem to reproduce in one product the features which have made carbon tetrachloride of such value in industry. These features are its excellent solvent characteristics, its speed of evaporation, and its non-flammability. Indeed, this combination of properties has made carbon tetrachloride so valuable that many concerns have taken the trouble to install the necessary equipment so that this solvent

could be handled with safety.

Those who have eliminated the use of carbon tetrachloride and turned to substitutes in order to reduce the toxicity hazard, have, in all cases, made some sacrifice. They have had to sacrifice either evaporation speed or flammability hazard or a combination of both. If proper technical skill and awareness of all aspects of the problem have been applied to the development of the substitute solvent, however, these sacrifices need not be too great.

Manufacturers of replacements for carbon tetrachloride—indeed all those who sell any industrial products—should assume the responsibility of seeing that their products are used with safety. Over-enthusiasm and the desire for volume sales must not lead to irresponsible promotion tactics. In many cases, manufacturers are

hesitant about placing warning notices or precautionary measures on their labels. The words "Safe, Non-toxic" on a solvent label will sell much more than the words "Caution; slightly toxic and low in flammability."

Too little information on a label is almost as dangerous as incorrect information. It is essential that a manufacturer provide enough information to the users of his product so that intelligent decisions can be made with regard to safe handling of these solvents. Users of so-called "safety solvents" have a right to know precisely under what conditions these solvents are safe, and under what conditions a hazard might exist.

There are conditions under which many safety solvents will burn, and there are conditions under which many safety solvents will produce a toxicity hazard. No

user should ever be lulled into a false sense of security concerning either hazard. An ethical sales policy, in the long run, pays off in satisfied customers, repeat sales, no damage suits, and the satisfaction of ethical salesmanship.

Flammability

Many of the useful properties of solvents depend on rapid evaporation. This speed or rate of evaporation varies with the chemical nature of the solvent, temperature, barometric pressure, and the rate at which air passes over the surface of the liquid. Through evaporation there results, especially in confined areas, a high concentration of solvent vapors in the air immediately above the liquid surface.

This vapor air mixture will ignite more easily than the liquid itself; thus, speed of evaporation, although very desirable, usually introduces increased fire hazard. The vapors of almost all solvents are flammable to varying degrees. Only some of the halogenated solvents will produce non-flammable vapors.

Flash and fire point determinations are often used for this purpose. Flash point is defined as "the lowest temperature at which enough vapors are given off to form a flammable mixture of vapors and air immediately above the liquid surface." This ignition will not take place unless there is



Solvent spray cleaning of motors. This type of cleaning can be extremely hazardous if not properly controlled. (Photo courtesy "Esso Oilways.")

also present a spark or open flame.

Since values vary depending on the method and instrument used for this test, flash point results should indicate the method used for determining them. Tag and Pensky-Martin closed cup flash point testers are commonly used for highly volatile liquids, and the Cleveland open cup tester is used for less volatile materials.

With these instruments, a small flame is exposed to the vapors of a liquid. The temperature at which these vapors ignite and flash is designated as the flash point. The temperature at which these vapors ignite and continue to burn for 5 seconds is designated as the fire point.

It is a mistake to assume that
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MELVIN Z. POLIAKOFF is Technical Director, The Penetone Company, Tenafly, N. J.

TABLE I

SOLVENT	VAPOR PRESSURE (68°F)	M.A.C. (p.p.m.)	FLASH POINT (°F)
CHLOROHYDROCARBONS:			
Dichloromethane	355	200-500	None
Carbon tetrachloride	91.3	25-100	"
Trichlorethylene	56	100-200	"
Perchlorethylene	14.4	200	"
Ethylene Dichloride	62.5	75-100	56
ALCOHOLS:			
Methyl alcohol	98.3	100-300	52
Ethyl alcohol	44	100-1000	55
HYDROCARBONS:			
Gasoline	235 (100°F)	500-1000	-50 to -10
Mineral Spirits	7 (100°F)	200-1000	105
Kerosene	0.5 (100°F)	200-1000	110 to 165
Benzol	75.5	50-100	12
Toluol	22	100-200	40
Turpentine	4.4	75-175	95
ESTERS AND KETONES:			
Acetone	186	200-1000	0
Ethyl Acetate	72.8	400	24



Eye tests should be conducted with the needs of the job in mind. It should be remembered that perfect vision is not the answer to all accident problems.



With defects corrected a worker is able to work with greater safety. Good light and proper use of color are also needed.

Occupational vision programs aid operation as well as safety. Here is an objective approach to the subject—what such programs will do and what they will not do

SAFETY engineering and optometry are closely related. Both are among the accredited elements that comprise the coordinated functions of management.

If we limit this discussion to the relationship of optometry to safety engineering we can include

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only those management problems involving accident hazards. By discussing optometry as it affects the broader aspects of industrial management we can get a better idea of its potential usefulness to industry.

Let us review the major advantages of an occupational vision program:

- Greater accuracy and improved quality of work
- Better industrial relations
- Less spoilage
- Increased output
- Better use of floor space
- Easier maintenance
- Better supervision
- Decreased eye strain and fatigue
- Improved housekeeping

What Good Vision Can Do For Management

By ROBERT CLAIR

Photos by Bausch & Lomb Optical Co.



Better placement of employees
Prolonged working life

Clues to possible accident prevention problems involving vision are fairly easily identified. Usually these come from analysis of accidents indicating that some production department or some specific job has a high or steadily increasing accident frequency. Such simple clues open the door for further study and analysis, to determine whether or not the optometrist can assist in solving the problem.

On the other hand, clues to management vision problems may be found in other control records having to do with such elements

as quantity, quality, time, cost of production, volume of waste or scrap, labor turnover, etc.

Approaching Management

There are three possible approaches which may be used in selling optometric service to industry. The first two are generalized approaches. The third offers services for consultation on a specific management problem. I recommend this as the best initial approach. One or more successful specific approaches of this kind will make it easier to institute a generalized program at a later date.

1. Plant-wide testing and correction of vision.

This approach should not be used until the optometrist has been successful in solving one or more specific problems. It might be called a shotgun method in which ammunition is scattered over a number of targets in the hope that a bull's eye may be scored here and there.

Results are in doubt, or they may be delayed. Management wants predictable results sooner. Again, this generalized method includes testing and correction for employees who have no occupational need for such correction. Finally, this approach implies that

the optometrist alone can solve any or all vision deficiencies in an establishment.

II. The truly generalized program.

This involves a four-point program carried out by the optometrist in collaboration with three other industrial specialists. Such a program is rarely sold to management. Again, the executive wants faster action than this program can produce and considers the cost high in view of the uncertain and delayed results. This generalized program also involves the correction of vision in cases where the job does not require it.

The optometrist should realize that he alone cannot provide a truly generalized occupational vision program. Effective occupational seeing actually involves adequate illumination, scientific use of color, and eye protection as well as good vision.

A truly comprehensive program should provide for the application of these four factors in balanced combination. Here are a few brief comments on them:

1. Evaluation and correction of vision.

This is the part contributed by the optometrist. It includes testing of all employees and providing for the correction of defects found,

plus collaboration with other specialists on the three other parts.

2. Adequate illumination.

This includes activities in the specialized field of the illuminating engineer. A complete new system of illumination may be installed but this involves substantial expense and is not the usual procedure. More often improvements are adopted to get the most value from the present installation.

3. Use of Color.

Use of color in industry is still a comparatively new practice in industry. The quality of light and the color of objects are blended in producing a three dimensional effect to supplement the other three factors in this program and to bring about desirable psychological effects. Intelligently used, color offers a number of benefits. Problems of this kind require handling by specialists trained in the practical application of color.

4. Eye Protection.

Protection of the employee's eyes against injury was the first phase of the industrial problem to be explored. It involves the engineering approach, consisting of an evaluation of the eye injury hazard, development of methods for controlling the hazard at its source, and the supplying and maintaining of eye protection devices.

These are essential because everything that might be done under the first three points of the program would be canceled out by injuries occurring through neglect of the fourth point.

Such a comprehensive program is a large and costly order for the optometrist to sell and for industry to buy. Our representatives have rarely been successful in selling such a program. The optometric profession is equipped to function exclusively in only one of the four parts of the program. If maximum results are to be obtained they must cooperate with the three other consultants—the illuminating engineer, the color expert, and the safety engineer.

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Correction of visual defects may be wasted if eyes are exposed to hazards on the job. It must be accompanied by adequate protection on hazardous operations.

Industry's Problem Children

By GERALD GORDON, M.D.

Psychiatry is more than mind reading; it's correcting behavior, too. Men allowed to shirk responsibility become mentally sick

HAZARDOUS materials used in the chemical industry created a special problem for management from the very inception of the du Pont Company. The dangers are such that losing control of many of these potent forces for a single instant could incapacitate an entire operating group as has happened, on occasion, in the past history. This has led to an emphasis on safety performance which became as much a part of management policy as control of quality or an accurate accounting system, and has resulted in earning the National Safety Council's highest award ten times in a row. The du Pont frequency rate has been eight times better than the chemical industry and 14 times better than all industry. This performance, unfortunately, is not universal throughout the company.

These figures are presented only to demonstrate that even in hazardous operations it is possible to get people to work without injuring themselves.

If we consider a good safety record as a state of health, then a bad record is a form of sickness. It is the job of the industrial physician to make a diagnosis where sickness exists.

Man has been so created that it is natural to avoid injury. Touch-

ing a hot pipe sets off automatic reactions which remove the body from danger. In spite of all the hostile forces nature has thrown at him, he has survived. Fire, flood, earthquake, lightning, falling rocks and predatory animals all took their toll, yet man survived.

The chemical industry, in which these observations have been made, found it possible to control the similar natural forces. Engineering, medical and safety skills have made the industrial plant a safer place in which to be than in one's own home.

Investigations of plant accidents rarely indicate that the natural force broke from its controls, by itself, and caused injury. The usual finding is that some employee did, or did not do, something which was the real cause of injury. Training and experience are usually found adequate, safety devices available and functioning, but the individual injured himself by breaking the rules or simply not using the good sense God gave him.

Poor Performance

One of our safety men reported that in 90 per cent of the incidents he investigated, the factors which had culminated in injury were under the direct control of the employee involved. This may be illustrated by the man who had lost a finger in a fan blade and promptly lost another when he was demonstrating to the investigating committee how he had lost the first one.

Careful study of the records

indicates that some individuals not only repeatedly injure themselves, but show similar poor performance in their attendance and job productivity as well. These same employees seem to be in trouble both on and off the plant and, in addition, cause a majority of the personnel and industrial relations' problems.

The Repeaters

Not only does their general performance tend to be poor but the records also indicate that individuals establish this pattern early in the course of their employment and this persists almost without regard to external circumstances until some action is taken to stop it.

If a deck of cards is thrown into the air in the middle of a room and the number of cards counted at successive points is plotted, this will be the curve of chance happenings. If accidents were purely accidental occurrences, then correlating their occurrence in a group of people should show a typical bell-shaped curve. Many studies have shown that this is never true for accidents. There are always a few individuals who incur most, while many have few or none. Studies of absenteeism, personnel problems, or other forms of employee failure reveal that a relatively few individuals cause the major portion of the problem.

A study in Montreal, Canada,¹ investigated two groups of 100 automobile drivers. One group had been involved in four or more accidents, the other none. These names were submitted to various

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legal and social service agencies. Sixty per cent of the accident repeaters had been in various other difficulties requiring the intervention of these agencies as against only 9 per cent of the accident-free group.

The Credit Bureau knew 34.3 per cent of the repeaters, 6 per cent of the accident-free; social service agencies knew 17.7 per cent of the repeaters, 1 per cent of the non-repeaters; the Adult Courts, exclusive of traffic violations knew 34.3 per cent of the repeaters, only 1 per cent of the others; the Juvenile Court knew 16.6 per cent of the repeaters, 1 per cent of the others, and even the Public Health and Venereal Disease Clinic knew 14.4 per cent of the repeaters, but none of the accident-free group. Follow-up studies over 2 to 3 years show that these people tend to continue their poor performance. These authors concluded that a poor accident record was only one manifestation of an inadequate "method of living."

A group of employees with known emotional problems seen on a plant showed a significantly higher accident rate than the rate for all employees.

This persistent inadequate performance raises the question whether such behavior is compatible with mental health. The very many things we have all seen men do to injure themselves do not seem to be either reasonable or sane. The individuals are suffering from a common, but little recognized, form of mental illness which is so widespread that it may be found to some degree in all of us. Because it is so universal, we find it difficult to see in others and all but impossible to see in ourselves.

"Normal" People, Too

Mental illness among "normal" people is no insignificant problem since 25 to 30 per cent of any large group are sick enough to constitute a real menace to society or themselves. This emotional sickness may find expression in

many ways. Alcoholism, our high divorce rates, the greater part of our physical ills, and certainly the majority of our so-called "accidents" are but a few examples. This mental illness is found in its worst form in those individuals who are least productive.

It would appear, then, that injuries cannot be considered as

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The Mentally Ill

1. A definite emotional causative factor is noticeable in the occurrence of most injuries.

2. The causative factor is a form of mental illness. Safetywise, the important manifestation is the failure of the individual to behave safely.

3. When people are permitted by supervision or society to evade good performance in working and living, this illness is encouraged.

4. Correction of the poor behavior seems to cure the mental illness.

★ ★ ★ ★ ★ ★ ★

purely engineering problems isolated from the human being. It is people who hurt themselves and it is people's over-all performance that must be taken into account.

The problem employees tend to be those who evade the rules, both of working and living. They tend to evade responsibilities for their own welfare and act generally as though someone else should take care of them. They evade the rules because through childhood and adolescence they were not required to abide by them and are still able to evade acting like normal productive employees by one excuse or another. Unfortunately, some supervision permits and encourages this evasion by not requiring good attendance, good health, and good work performance without injury. The employee who suffers most from this mental illness is usually the one who has had the most done for him and had the least required of him.

One employee's record is reported in some detail because it illustrates what is meant by mental illness as the term is used in this paper. After about a year of no-injury performance in a plant,

the record was broken by a major injury which occurred when an employee injured his leg on a projecting piece of metal while riding the step of a train. A review of this man's medical record revealed that he had eighteen years' service, was 61 years old, and was in excellent physical health. In 14 years he had 16 lost-time illnesses ranging from 4 to 63 days. This averages 17 days per eligible year as against the company average of 5 days per year.

Nor do these figures include many one and two days' absences for which figures were not really available. In addition, there were 134 surgical visits to the dispensary. He repeatedly cut himself, smashed fingers, stepped on rusty wires, and fell down stairs. There were 74 medical visits for nervousness, upset stomach, and such complaints. Looking further into this man's record, we find that he had received penalties for running a train through a switch, breaking it and derailing the train, causing a truck to run into the side of the train by failing to flag a crossing; failing to note clearances causing a gondola to sideswipe another car.

In addition to these major offenses, there were investigation reports on running a car into the plant gates by failing to check couplings; on a car pushed off the rails; on a car jumping the rails and damaging the dock, and on a tank car running back into the train because he failed to wait for the surging to stop before chocking the wheels.

Too Many for Chance

Five months after the original injury mentioned, he received a severe chest injury in an off-the-plant automobile collision. Two months later, he received severe contusions and abrasions of both legs when he slipped from the icy running board of a tank car. Six months later the company received a letter from an attorney threat-

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Check It to Check Accidents

By **GEORGE MacDONALD**

THAT electrical hand tools, extension cords and extension lights are a serious source of accidents is borne out by statistics of the National Safety Council. Further, the Council feels that many accidents primarily caused by electric shock are not reported as such but are charged against falls, tools dropped on feet, burns, etc.

Electrical tools, such as drills, grinders, saws and extension cords, take severe abuse frequently. The cord of the tool is constantly being flexed, dragged over rough surfaces and stepped upon. The tool itself is often dropped. Because of this rough usage, it is simply a matter of time before we have an electrical failure in the form of a faulty switch, frayed or broken wires or a hot wire in direct contact with the exposed surface of the tool.

GEORGE MACDONALD is Senior Consulting Engineer, Industrial Department, National Safety Council.

All of these conditions create a potential source of accidents but some of these faults are not readily apparent upon visual inspection. Sometimes they are not detected until the tool has caused an accident.

To explain this statement further, a tool such as a power drill can be working satisfactorily in that the chuck will revolve but at the same time this tool might be unsafe to use. For example, a hot wire could be touching the frame of the tool and would in no way affect the mechanical running condition. But if the operator using the tool presented a good ground, by standing in a wet or damp area or by touching a water pipe or conduit pipe, he would sustain electric shock which in many cases might result in a fatality.

Present means of testing requires skilled electricians. After the occurrence of an accident due to a faulty electrical tool, it is

A constant check on the condition of all portable electric tools should be maintained at the tool crib.

charged to and is the responsibility of the safety department. But, all plant personnel, including the safety department, depends entirely upon the electrical department to see that electrical tools are in safe operating condition. Many plants which employ electricians are understaffed, which makes it almost impossible for the electrical department to conduct daily or even periodic tests to determine whether electrical hand tools are in safe operating condition.

Simplified Testing

As a matter of fact, the electrical department never sees a tool with a hidden defect until after that tool has caused trouble and is turned in for repair. There have been many cases where tools have been returned to the crib attendant, were re-issued in the morning without test, causing injury to an employee. Upon investigation, other employees reported that they had used the same tool the day before. They received slight shocks but paid no attention to them or made no comment to the crib attendant upon return at the end of the shift.

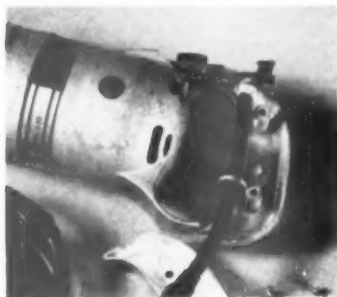


Portable equipment is carried to the drill press in the shop to check against electrical failure and accidental shock to operators.

Recently an ingenious tool-testing instrument was designed by an electrical engineer and a safety engineer so that a tool crib attendant can perform the test in the most satisfactory manner. This equipment allows daily testing, taking less than seven seconds to completely test the tool. The instrument is simple enough so that the test can be performed by unskilled help. It provides a means whereby an electrically unskilled person can spot an unsafe tool before it is issued for use and before it can cause an accident.

Briefly, the operating principle of this tester is a simple stop-and-go visual method. This is indicated by the flashing of red or green lights which are standard every day colors that everyone understands.

The testing procedure of each tool comprises four different steps,



Exposed energized wire inside handle of tool making contact with metal shell.

each step taken in sequence and performed by merely depressing a button. Of the four tests, three are preliminary tests—the lamp test, the ground test, and the circuit test. First, the lamp test checks the red and green lamps to determine that they are in operating condition and have not burned out. The ground test checks the continuity of the grounding circuit and the circuit test checks the tool, cord and switch for a direct short circuit.

The three preliminary tests are conducted at 6 volts with the final operating test at 110 volts.

The equipment is well designed

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W. S. S. Rodgers Heads NSC Trustees

W. S. S. RODGERS, Chairman of the Board of The Texas Company, has been elected Chairman of the Trustees of the National Safety Council.

Mr. Rodgers has been an active trustee of the Council since 1915. As chairman, he succeeds Lee Warren James, New York attorney, who retired.

"I am convinced that organized accident prevention work is concerned with one of the most important social and economic problems in this country," Mr. Rodgers said. "The progress that has been made by such work, especially since the public service program of the National Safety Council was begun 10 years ago, is evidence of what can be accomplished and of what still needs to be done.

"Every year since the Council began its public service work—directed at all types of accidents, non-occupational as well as on the job—the country's death rate has been lower than it was the year before this work was begun. This fact is a challenge to greater effort, but certainly no reason for complacency.

"The fact that about 45,000 lives, which otherwise would have been saved as a result of this reduction in the accident rate during this period is gratifying, but the fact remains that accidents are still killing more than 90,000 persons every year, injuring more than 9,000,000 others, and causing an estimated economic loss of nearly \$3,000,000,000 in this country."

Mr. Rodgers was born in Columbus, Ohio, the son of William S. S. Rodgers and Florence (Eberly) Rodgers. He attended Asheville School, Asheville, N. C., from 1902 to 1904, and was graduated from Sheffield Scientific School, Yale University, in 1907.

After a few years of mining experience, Mr. Rodgers entered the



W. S. S. Rodgers

oil business, starting with a producing company in Midway Field, California.

With the exception of a period of war service as captain in the Ordnance Department, U. S. Army, from 1917 to 1919, Mr. Rodgers held various positions in the refining department of The Texas Company for 10 years after joining the organization in 1915.

He became assistant to the president in 1926, and two years later was elected vice president in charge of domestic sales. Shortly thereafter he was elected a director of the company, and soon became a member of the executive committee. Mr. Rodgers was elected to the presidency of the company on April 25, 1933, and became chairman of the board of directors on April 25, 1944.

Mr. Rodgers is a director of the Freeport Sulphur Company, National Dairy Products Corporation, and is a director and member of the executive committee of the American Petroleum Institute.

During World War II Mr. Rodgers served as a member of the Petroleum Industry War Council and as a member of numerous sub-committees of that Council, including the synthetic rubber committee, of which he was chairman.

"What's in It for Me?"

By RAYMOND W. AVISON

A flippant comment scribbled on a poster gave the safety department something to think about

THREE years ago we were having a bad time. Our accident frequency rate was way up and we didn't have any idea what was wrong. We had taken all the usual precautions to insure a safe shop. We had a good safety committee that made regular inspections and their suggestions were followed religiously. We had a fine first aid room with a graduate nurse in attendance and a good doctor on call to give us aid and medical advice. Yet our accident rate continued at an abnormally high rate, —well above the national average.

One day while making a routine trip through the factory we stopped to look over one of the bulletin boards. On it was a notice which read:

*Stop, Look, and Think, before you Act
It pays to be sure
It pays to be careful
Safety pays*

Across this notice someone had scribbled "What's in it for me?" This presented a challenge and started us thinking that perhaps the answer to our problem lay in the fact that our people didn't really know the value of a safe shop. If so, it was our responsibility to inform them. We felt that somehow we had been negligent. Though we had given our people good mechanical equipment and medical service, we somehow had not succeeded in getting each and every one to believe in safety and to know and understand what it really means to them personally.

RAYMOND W. AVISON is Personnel Manager, Millers Falls Company, Millers Falls, Mass.



Refreshments were on the house when the plant safety record reached 3,000,000 man-hours. It represented more than three years' work.

It seemed to us that the *problem* was to improve our safety record and to bring it down to at least the national average of our industry.

The *solution* was to educate our people and to get them to feel that safety does pay dividends.

The *reason* was to make our shop a better place in which to work.

The *result* is that we do have a safe shop with a much happier personnel, with lower labor turnover insurance costs. Our compensation insurance is carried by the American Motorists Insurance Company which provides us efficient safety and other services.

We decided to use the bulletin board as a means of getting the message to the people and the foremen.

The first bulletin to start off the program was:

*A good safety record
and*

*What's in it for me
I'm better off financially because insurance doesn't pay as much as I can earn at work.*

The second safety bulletin read:

*I can make a better living if:
I have all my fingers.
I have both my legs.
I have both my arms.
I am not maimed in any way.*

The third safety bulletin read:

*Give me the safe shop every time.
Would you really like to work in a dangerous shop?
Would you really enjoy seeing someone hurt in your room?
Think it over and I am sure you will agree there's plenty in it for all of us.*

Each week new and different notices appeared. Some drew attention to safety equipment such as gloves, hair nets, goggles, safety shoes, etc. Others were unusual safety slogans.

Each accident was immediately investigated and publicized, with attention drawn to the cause and what should have been done to prevent it.

Unsafe acts that were seen in the plant were used for the following week's accident bulletin with a description of the accident that might have happened.

These safety messages kept hammering away week after week until everyone looked forward to seeing what was coming next.

Each member of the safety committee was given a badge to wear so that he could be readily recognized in the plant.

Bonuses were given for safety suggestions turned in through the suggestion committee. These suggestions were publicized in the shop paper with the operator's picture and a description of his suggestion.

Foremen were encouraged constantly to draw attention to the good safety record attained by their departments and to give credit to their people for this record.



Unit First-Aid Kits

For Field and Small Plant Use

1. Unit first-aid material has proved to be more practical than bulk first-aid supplies for the use of a small number of workers in a group, small groups detached from a central location, groups working in isolated areas where immediate medical attention is not available, and crews on mobile equipment. (Figure 1.)

2. Unit first-aid material is recommended for use in these industries because each dressing and treatment is an individual unit for one-time use only, materials can be maintained in a sanitary condition, there is no deterioration of the materials or dressings during periods of infrequent use, and there is more likely to be a sufficient quantity and wider assortment of bandages.

Standardization by Manufacturers

3. The Division of Simplified Practices, U. S. Bureau of Standards, in cooperation with industry, has written *Code R178-41* to simplify maintenance of industrial first-aid kits and to establish commercial standards for sizes of unit cartons and kits. The intent of the Code is to facilitate the handling and economical replenishing of dressings. Such standardization eliminates the necessity of repackaging and rewrapping dressings. The contents of the kits do not spill, leak, or deteriorate, and they remain clean and sanitary.

4. Materials are packaged in three standard size stock cartons, a single unit size and two multiples of that size. (Figure 2.) This permits a wide choice of dressings and other materials for any selected size kit. (Figure 3.)

5. There are four standard sizes of first-aid kits. (See Figure 4.) The construction of the container

This Data Sheet is one of a series published by National Safety Council. It is a compilation of experience from many sources. It should not be assumed that it includes every acceptable procedure in its field. It must not be confused with American Standard Safety codes, federal laws; insurance requirements; state laws, rules and regulations, and municipal ordinances. Reprints of Data Sheets are available from the National Safety Council.

must meet the following minimum specifications:

Welded seams and joints.

Rounded corners.

Cover attached by continuous piano hinge with 90° stop spot-welded in place.

Steel wire handle.

Two pull-down fasteners constructed not to jar loose, drilled for installing sealed wire.

A rubber gasket mounted in cover or body of kit to seal it tightly.

All parts protected against corrosion.

Constructed to pass dust-and moisture-proof tests.

Edges turned and rounded out of contact with user.

Finished inside and out with baked-on enamel.

6. Kit sizes and combinations of dressings and other contents are determined by the number of persons to be protected, with consideration given to the nature and frequency of the injuries likely to be encountered. A general rule of thumb is that one 24-unit kit should be used for each fifty employees; for smaller groups of workmen the smaller kits listed in Figure 5 are satisfactory. Kits should be so placed that no workman is more than a few minutes from first aid.

Regulations (Federal or State)

7. Some industries, particularly those under the supervision of various departments of the federal government, will find that unit first-aid material is required. Many states, following this example, have similar regulations. Before determining the size kits, assortment of contents and location of kits, it is advisable to consult the Division of Occupational Health of the United States Public Health Service, the industrial hygiene division of the state health department, the state labor department, or a manufacturer or dis-



Figure 1. A unit first-aid kit being used by a public utility company crew.

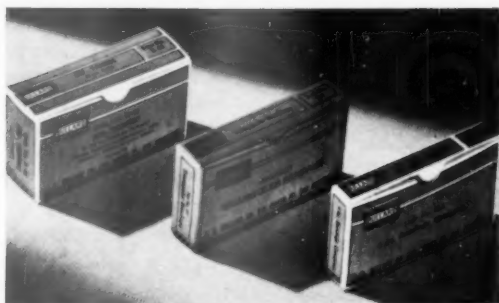


Figure 2. All unit packages are the same in two dimensions. The third dimension varies in multiples of $\frac{5}{8}$ inch—the thickness of a single unit. Here, the single unit size A ($\frac{5}{8}$ "") is on the right. In center, the double carton, AA ($1\frac{1}{4}$ ""); left, the triple carton, AAA ($1\frac{7}{8}$ ""). (Courtesy E. D. Bullard Co.)



Figure 3. There are four sizes of kits: 10 unit, 16 unit, 24 unit, and 36 unit. Each holds the number of single unit cartons indicated or an equivalent combination of single, double and triple cartons. (Courtesy Mine Safety Appliance Co.)

tributor of unit first-aid material, who can advise regarding current regulations.

8. Since the federal government is the largest purchaser of unit first-aid material, the specifications outlined in *Federal Specifications GGG-391* (Amended) are generally accepted. Many state and federal departments, not wishing to elaborate further, simply state, "In absence of other specifications, *Federal Specifications GGG-391* will apply." Therefore most manufacturers use these specifications as a basis for producing their unit first-aid material and kits.

9. In addition to conditions outlined in Paragraphs 7 and 8, it is wise to consult the medical director, nurse, or in-service medical staff for recommended procedures, antiseptics and burn ointments. To eliminate the necessity for his undoing what has been done, a physician frequently prefers the first-aid treatment to be the same as he would use when the patient gets to him.

Industries Where First Aid Is Desirable

10. Following is a partial list of industries or job classifications where unit-type first aid is either required or considered desirable:

- Air Lines (Air and Ground Operations)
- Buses (Interstate)
- Buses (School)
- Camps, Parks and Beaches
- Cement Plants
- Chemical
- Coal Mining
- Commercial Fishing Boats
- Construction (Heavy)
- Highway
- Power Line

- Pipe Line
- Dams
- Building Construction
- Fire Departments
- Forestry Departments
- Geo-physical Survey
- Highway Maintenance
- Highway Patrol
- Logging
- Lumbering
- Marine
- Barges
- Tugs
- Tankers
- Life Boats & Rafts
- Metal Mining
- Natural Gas Pipe Lines
- Oil Production
- Oil Tank Farms
- Oil Well Drilling Contractors
- Packing Food (Seasonal Plants)
- Petroleum
- Pipe Lines
- Police & Sheriff Depts.
- Public Utilities (Electric, Gas & Water)
- Quarries
- Railroads
- Baggage Cars
- Caboose
- Engines

- Post Office Cars
- Work Cars
- Ranches & Farms (Large)
- Refineries (Small)
- State Wild Life Services
- Telephone & Telegraph Companies
- Tree Trimming
- Tracking (Inter-City)

Kit Assortments Most Used

11. For those operations under federal regulation, the assortments shown in Figure 5 are in compliance with existing requirements. For other operations, the assortments have been arrived at through such means as surveys, trade association recommendations, state regulations, and assortments most generally used within a given industry as determined by the National Safety Council. It is not presumed that these suggestions will fit all cases, and the plant physician or nurse should help determine the specific assortment made. Requirements

—To page 70

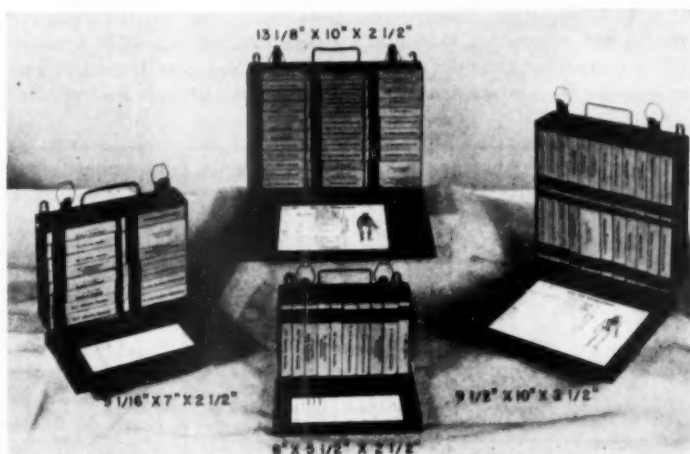


Figure 4. Four standard sizes of kits shown open. First-aid instructions are pasted inside the cover. Outside dimensions are given. (Courtesy Medical Supply Co.)

THE ACCIDENT BAROMETER

Prepared by the Statistical Division, National Safety Council

ACCIDENTAL DEATHS in October totalled approximately 8,400, an increase of 200 over October, 1951. Increases were recorded in deaths from home and public non-motor-vehicle accidents. There was a small reduction in motor-vehicle fatalities. Deaths from occupational accidents numbered about the same as in October, 1951.

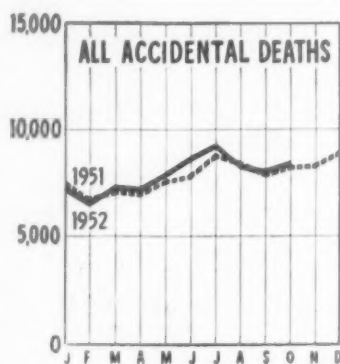
The total for ten months was 78,400, an increase of 2 per cent over the 1951 comparable total of 76,900. Most of the increase occurred in deaths from motor-vehicle and public non-motor-vehicle accidents, but deaths from home and occupational accidents also were more numerous.

Motor-Vehicle Deaths

The October total of motor-vehicle deaths was 3,610, a reduction of 3 per cent from October, 1951.

Deaths for the ten months totalled 30,830, an increase of 2 per cent over the 1951 total of 30,310. The ten-month death rate per 100,000,000 vehicle miles was 7.2, a reduction of 3 per cent from the 1951 comparable rate of 7.4.

Of the 44 states reporting for ten months, 21 had fewer deaths than in 1951, 1 showed no change and 22 had more deaths. A total of 459 cities with populations over 10,000, reported a reduction of 7 per cent for October and 5 per cent for the ten months.



	1952	1951	Change
October	8,400	8,200	+2%
Ten Months	78,400	76,900	+2%

Regional changes from 1951 in the ten-month death totals were:

North Atlantic	- 2%
South Atlantic	+ 3%
North Central	+ 2%
South Central	+ 1%
Mountain	+ 2%
Pacific	+ 2%

Occupational Accidents

Deaths from occupational accidents numbered approximately 1,400, the same as in October, 1951. The ten-month total was 13,400, an increase of 2 per cent over 13,200 in 1951.

The October frequency rate per million man-hours in seventeen sectional accident prevention contests conducted by the National Safety Council was 6.30, a reduction of 2 per cent from October, 1951. The ten-month rate was

6.53, a reduction of 7 per cent. The October rate for plants in community-council contests was 8.50, a reduction of 9 per cent from October, 1951. The ten-month rate was 8.39—no change from 1951.

Public Deaths

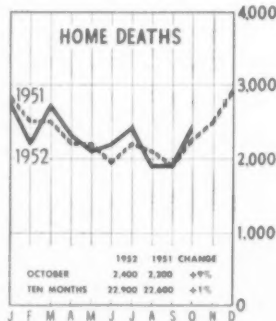
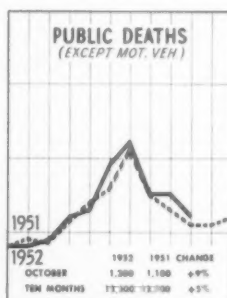
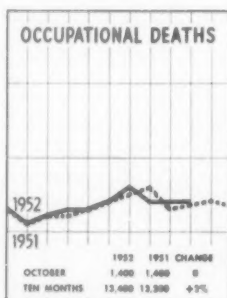
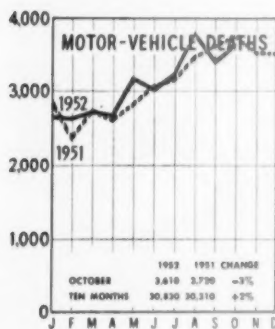
There were approximately 1,200 deaths from public non-motor-vehicle accidents in October, or 100 more than in October, 1951.

The ten-month death total was 13,300, an increase of 5 per cent over 12,700 in 1951. There were moderate increases in deaths from firearms accidents and drownings and a small increase in fatal burns. Deaths from transportation accidents showed a moderate reduction from 1951 while fatal falls showed no change. Most of the increase occurred among young people 15 to 24 years old but deaths of persons 65 years and over also were more numerous.

Home Deaths

October deaths from home accidents numbered approximately 2,400, or 200 more than in October, 1951.

The January-October total was 22,900, an increase of 1 per cent over 22,600 in 1951. A sizable increase occurred in unclassified home deaths and a small increase in fatal burns. There were small reductions in deaths resulting from falls, firearms accidents and mechanical suffocation. Increases were reported in deaths of children under 5 years old and persons in the age groups from 25 to 64 years of age.



"We've reduced our scrubbing time from 70 to 7 man-hours ... and our floors have never before been so clean!"

— says Foreman of
BURNY BROS. BAKERY, CHICAGO



Garage and stockroom floors in Burny Bros. large, modern bakery get daily scrubbing with a Job-Fitted Combination Scrubber-Vac and Setol Cleanser

THEY'RE an unbentable team to speed the cleaning of oily, greasy floors. Here's why: A Scrubber-Vac completely mechanizes scrubbing. It applies the cleanser, scrubs, flushes if required, and damp-dries the floor—all in one operation! Job-fitted to specific needs, a Scrubber-Vac provides the maximum brush coverage consistent with the area and arrangement of the floors. Its teammate, Setol Cleanser, is specially designed for the greater speed of combination-machine-scrubbing ... emulsifies grimy oil and grease instantaneously for fast, thorough removal by the machine's powerful vac. Moreover, Setol retains its strength longer than average alkaline cleansers. This, too, speeds the cleaning process ... saves on materials ... and cuts operating

time of the machine, which in turn reduces labor costs. The Scrubber-Vac shown above is Finnell's 213P, for heavy duty scrubbing of large-area floors. It has a 26-inch brush spread, and is capable of cleaning up to 8,750 sq. ft. per hour! Finnell makes sizes for small, vast, and intermediate operations (available on lease or purchase plan) ... also a full line of fast-acting cleansers. In fact, Finnell makes everything for floor care! Find out what you would save with combination-machine-scrubbing. For demonstration, consultation, or literature, phone or write nearest Finnell Branch or Finnell System, Inc., 2202 East Street, Elkhart, Indiana. Branch Offices in all principal cities of the United States and Canada.

FINNELL SYSTEM, INC.

Originators of Power Scrubbing and Polishing Machines



**BRANCHES
IN ALL
PRINCIPAL
CITIES**

The SAFETY VALVE

Nothing human is alien to me.

—TERENCE

Psychiatry Simplified

LIKE A LOT of other people I've had some fuzzy ideas about psychiatry. I've never been quite sure where psychology leaves off and psychiatry begins.

The psychiatrist digs into the dark corners of your past and tries to put the pieces together to find why you aren't normal. Professional jargon includes such terms as 'repression, frustration, libido, and the like.

Psychiatry has straightened many a person's thinking but it is no more infallible than other types of treatment. It sometimes happens that a person endowed with mere common sense and an instinctive understanding of human nature can get at the cause of the trouble more directly.

In the article, "Industry's Problem Children" (page 32), Dr. Gerald Gordon, a du Pont psychiatrist, has a simple explanation for much of the mental sickness that plagues industry and society. People get that way because they've been dodging responsibility for years. Parents, teachers and bosses let them get away with it. Lack of training and discipline is responsible for much poor work, absenteeism and personal injury.

A well person put at bed rest for several weeks begins to deteriorate physically, Dr. Gordon points out. On the other hand, strength and stamina are increased by work. The same principle applies to mental health. The most disabling sickness is found among those who have succeeded best in shirking responsibility.

Some writers have suggested that supervisors become amateur psychiatrists and study the mental processes of their subordinates. Don't do it, says Dr. Gordon. Often more harm than good results from overzealous attempts to read a man's mind.

It's no kindness to a man to let him get away with poor work and chance taking. It's particularly unjust to fire him for incompetence after ten years of failure to correct his shortcomings. The supervisor who doesn't constantly demand good work and safe habits ends up with a department full of mentally sick persons and a high accident rate.

That doesn't mean that a boss should go around swinging a big stick, useful as it is at times. Being a keen and understanding observer and a sympathetic listener always help in dealing with people. There are times when a fellow needs a friend.

It doesn't take psychiatry to find out when a fellow has an aching tooth, trouble with the in-laws,

or is in hock over his head to the Friendly Loan Company. Prompt help with personal problems when needed—but no prying into private lives—is good for individual mental health and for group morale.

Maybe it's oversimplifying the problem, but many unscientific folks insist that there were fewer mental cases when pop used to nip youthful monkey business with energetic measures in the woodshed.

Walter G. King

JUST AS WE WERE getting ready to go to press, word was received of the death of Walter G. King, a past president of the National Safety Council and inventor of the industrial safety goggle.

It was a privilege to have known Walter King for more than 25 years. At each National Safety Congress I looked forward to a visit with him. My daughter has always remembered the kindly old gentleman who gave her some glass eyes when as a child she visited the exhibits. For years she kept them in her collection of souvenirs.

In his lifespan of 92 years Walter King saw striking advances in safety and his own contribution to progress was the development of devices that saved thousands of eyes. At 88, he summed up his philosophy in these words:

Contribute something for the betterment of humanity and you will achieve true happiness in life.

In This Issue . . .

ACCIDENT PREVENTION has followed the Armed Forces to remote corners of the globe. This month's leading article describes a construction project 800 miles from the North Pole—and probably the farthest north safety program yet undertaken. (Page 18)

* * *

Taking pictures is a fascinating hobby and a camera can provide a lot of good material for slide-films, posters and the employee publication. (Page 22)

* * *

Some basic principles of dust suppression, often overlooked in practice, are described in this article based on British experience and research. (Page 26)

* * *

The value of good vision in industry can't be questioned. It is an aid to more and better work and an important defense against accident. But putting corrective lenses in front of eyes that need them isn't enough. The optometrist must work with other specialists in improving seeing conditions. And corrected vision may be wasted if eyes are not protected against hazards on the job. (Page 30)

CARMAN FISH

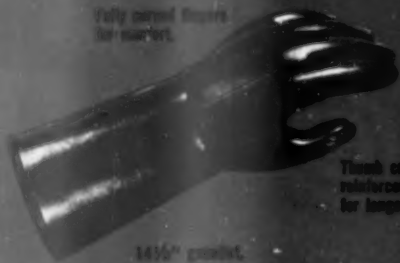
HOOD

Neoprene Coated Gloves are liquid-proof . . . wear longer

Model 7703

Assures total protection in operations that involve dipping, splashing or spraying.

Fully coated fingers
(no inserts).



Thick wrist
reinforcement
for longer wear.

14 1/2" gauntlet.

Model 4703

Keeps hands away from chemicals, acids, alkalis, caustics and corrosive agents.

Good
natural fit
fingers.



Bumpy
finger tips.

Fast-color
ball writer.

Standard working comfort
for longer wear.

Hood makes a complete line of industrial rubber and plastic gloves to meet every job requirement. Write today for our colorful catalog which features the Hood Glove Guide. It shows you "how to choose the RIGHT glove for EACH job."



HOOD RUBBER CO., Watertown, Mass.

**EXTRA
PROTECTION**



No 2424

**against FIRE
THEFT · SABOTAGE**

**In the
silence of the night**

the watchman makes *his* rounds while the hands on his CHICAGO Watchclock make *their* rounds.

In the morning, there is a permanent dial-record of exactly where the watchman was during each hour...in the silence of the night.

The tamperproof CHICAGO Watchclock system is approved by both THE UNDERWRITERS' LABORATORIES and by THE FACTORY MUTUAL'S LABORATORIES. It gives extra protection against fire, theft and sabotage.

**CHICAGO
WATCHCLOCK**
The first—and still the first

**Quickly
pays for
itself...
REDUCES
INSURANCE
RATES**

Send for illustrated folder



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1524 S. WABASH AVE., CHICAGO 5, ILL.

OFFICES IN PRINCIPAL CITIES

GREEN CROSS NEWS



Activities of Local Safety Councils and Chapters

Compiled by TOM A. BURKE

Director of Local Safety Programs, Field Organization, NSC

A Hospital Survey

A recent survey conducted among local hospitals by the Greater Cincinnati Safety Council, in cooperation with the Hospital Association of Southwestern Ohio and Hospital Care, Inc., brought out some challenging facts regarding hospitalized accident cases. Three hospitals, General, Christ and Good Samaritan, reported a total of 603 accident cases that sent people to the three hospitals for treatment, between October 20 and November 3. These cases were 259 home injuries, 120 traffic, 105 occupational, 91 in various recreation pursuits and 27 school cases. The figures give some idea of the magnitude of the accident problem—603 accident cases brought into three city hospitals in just 14 days!

Dollars for Safety

Individual memberships in the form of "Dollars for Safety" are the objective of the first campaign of its type launched recently by the Greater Los Angeles Chapter of the National Safety Council. The drive will not affect the Chapter's regular industrial memberships. It is hoped that the funds raised through the individual dollar subscriptions will provide needed money to carry on the Chapter's constantly growing public safety operations and its general expansion throughout the fast growing Los Angeles area. James T. Blalock, general chairman of the Chapter's Green Cross campaign, in announcing the new drive, said: "Everyone in Los Angeles County has an individual

stake and interest in accident prevention. We decided it was about time to give the individual an opportunity to identify himself with the problem—and to help solve it."

Oak Park Sets Up Council

Citizens of Oak Park, Ill., a Chicago suburb, recently organized a community safety council following a preliminary mass meeting in November that included representatives of important civic groups. Paul Ayres, well known Chicago business man, was named president of the Council at the organizational meeting on December 10. Nina B. Sugg, head of an Oak Park mercantile establishment, who previously had wide experience in community and state safety work in Iowa, was named executive secretary. With fine leadership and the active support of many interested organizations, the Oak Park Safety Council should be able to reduce substantially accidental deaths and injuries in the area. An adequate budget is being raised to carry on a broad program of educational activities.

Safety on the Line

The Western Pennsylvania Safety Council recently has been active in promoting safety among railroad employees throughout the Western Pennsylvania area. Council Manager Harry Brainerd and his assistant, Earl Stephan, have been traveling with the "Safety Car" on the Bessemer and Lake Erie Railroad, making talks along the line. The car, equipped to show movies, was sent to various points

in the area. In all, 44 employee meetings were held. The Pittsburgh and West Virginia Railroad has also been conducting an interesting program of employee education. It sponsored a 4-day "Safety Fair" over its line, with frequent stop-overs for the "Safety Special." E. C. Metzel, vice-president of the Western Pennsylvania Safety Council and assistant supervisor of safety for U. S. Steel, delivered a series of talks to the Pittsburgh and West Virginia employees.

Danny Diesel Club

Station WSIV of Pekin, Ill., is airing an interesting program called the "Danny Diesel Safety Club." It is sponsored by the Caterpillar Tractor Company to promote juvenile safety and make appropriate awards to safety-conscious youngsters. The program features the voice of the chiefs of police of the various communities in Tazewell County, the home of Caterpillar and WSIV. Youngsters of grade school age are selected for awards and program participation because of some special interest in safety or some particular accomplishment. Each youngster so honored receives a working model of the Caterpillar D-7 Tractor, along with a merit badge, membership card, etc.

Sioux Falls Annual Meeting

William O. Watson, manager of safety for Standard Oil of Indiana, was the speaker at the annual meeting of the Sioux Falls (S.D.) Safety Council and his talk was

—To page 57

Q. WHAT *Floor Waxes* ARE SPECIFIED MORE AND MORE BY SCHOOLS AND OTHER INSTITUTIONS?



A. WAXES THAT COMBINE

ANTI-SLIP SAFETY!

PLUS LONG-WEARING BEAUTY

THAT MEANS WAXES CONTAINING DU PONT "LUDOX"

Now institutions can give floors anti-slip safety *and* durable beauty by using waxes containing Du Pont "Ludox" colloidal silica. Invisibly tiny particles of "Ludox" in waxes offer new walking safety, *as well as extra film hardness.*

And waxes properly formulated with "Ludox" are fully equal to the best of floor waxes in gloss, water resistance, leveling, and other desirable properties. With all these advantages, you can see why waxes containing "Ludox" are specified by more and more safety and maintenance engineers.

If you are not already using anti-slip waxes containing "Ludox," ask your supplier about them. Or, if he cannot supply you with a wax fortified with "Ludox," consult E. I. du Pont de Nemours & Co. (Inc.), Grasselli Chemicals Dept., 4147-N Du Pont Bldg., Wilmington 98, Delaware.

How "LUDOX" gives slip resistance

As the foot presses on the waxed floor, submicroscopic particles of "Ludox" (so small that there are more than 300 trillion under the heel alone) press into larger, softer wax particles. This provides a unique anubbing action... helps keep the foot from slipping.



LUDOX

REG. U. S. PAT. OFF.

BETTER THINGS FOR BETTER LIVING... THROUGH CHEMISTRY

Personals

Corporate Service Names C. T. Wilson President

CLARENCE T. WILSON, formerly executive vice-president and general manager of Corporate Service, Inc., Detroit, has been named president. The president of the organization, Frank A. Morrison, was named chairman of the board.

Mr. Wilson was one of the original associates in the founding of the firm. He held positions with the National Safety Council, Detroit Industrial Safety Council, Cleveland Safety Council and the Kelly-Springfield Tire Company prior to his association with Corporate Service, Inc. He is a member of the American Society of Safety Engineers and Veterans of Safety, as well as the Society of Technical Safety Engineers (Michigan).

Mr. Morrison was, for several years, secretary of the Chrysler Corporation. He was a member of the Board of the National Safety Council and chairman of the Board of Directors of the Detroit Industrial Safety Council. Mr. Morrison is also past chairman and director of the Michigan Safety Conference, of which he was one of the founders.



C. T. Wilson

News, and Industrial and Engineering Chemistry, for which he conducts a monthly column on safety.

He joined the du Pont Company on January 29, 1912, as a chemist at Eastern Laboratory, Gibbstown, N. J. In the same year, he was transferred to Hercules, Calif., remaining there as a chemist until 1915, during which time the plant became part of Hercules Powder Company.

From 1916 until 1920, he served successively as dynamite supervisor in Kenvil, N. J., assistant to the technical director of the Wilmington office; and TNT supervisor and dynamite supervisor at

Kenvil. In 1920 he was named assistant works manager at Gulfport, Miss., becoming acting works manager the following year.

From 1922 to 1925, he served as assistant superintendent of the Brunswick, Ga., naval stores plant, becoming technical manager in 1925 until his transfer in 1928 to become manager of Mississippi operations in Hattiesburg.

After three years in that post, he returned to Brunswick as technical manager, until he was sent to the Kalamazoo, Mich., plant where he was general superintendent of the Paper Makers Chemical division from 1933 to 1938.

From 1938 to 1940, Mr. Crosswell served as safety engineer at the Wilmington office, becoming manager of safety for the three departments in 1940.

GILBERT F. TYLER has been appointed safety director of the Ford Instrument Company, Long Island City, N. Y.

Mr. Tyler, a graduate of M.I.T., 1933, was formerly superintendent of the safety engineering division of the National Surety Corporation, and before that worked in the same capacity for the Atlantic division of Pan American World Airways. He is a member of the American Society of Safety Engineers, and other professional societies. He has been a member of the executive committee of the Air Transport Section, National Safety Council, serving as general chairman, 1947-48.

WALTER A. GLEASON, supervisor of safety for Hammermill Paper Company, Erie, Pa., since 1920 and a former general chairman of the Pulp and Paper Section, National Safety Council, retired December 31. He is succeeded by HARRY J. HAHN, a member of the Hammermill Personnel Division since 1945.

Mr. Gleason started with Hammermill as timekeeper in 1916. In 1918 he was promoted to paymaster and in 1920 he was appointed supervisor of the newly organized safety department. He

Volney R. Crosswell Retires

VOLNEY R. CROSWELL, a pioneer in the naval stores field and a veteran of nearly 41 years' service with Hercules Powder Company, Wilmington, Del., retired December 31.

Mr. Crosswell, manager of safety for three Hercules departments—Naval Stores, Paper Makers Chemical, and Synthetics—has served in managerial capacity at five Hercules plants.

Mr. Crosswell has been the author of numerous articles on industrial safety and naval stores in a wide range of publications, including the *Encyclopedia Britannica*, *Chemical and Engineering*

This year hundreds of Christmas greeting cards came from all over the world. This is to thank all of you for your remembrance and to express my deepest gratitude for your friendship to the Council.

The helpful things you do in safety and the kind words you utter are a daily source of inspiration.

My warmest personal greetings and best wishes for 1953.

—NED H. DEARBORN



PAX-LANO-SAV . . . Heavy Duty carries the Official Seal of Acceptance of the Committee on Cosmetics of the American Medical Association.



PAX-LANO-SAV

Heavy Duty Granulated Skin Cleanser

helps **STOP INDUSTRY'S "BIG ITCH"!**

• *Industrial Dermatitis averages 10 weeks lost time plus \$147 medical and compensation costs per case!*



®

AMAZING? Yes—but true, according to a survey recently conducted by OCCUPATIONAL HAZARDS. What's worse, dermatitis accounts for 60% of all occupational disease cases and almost 40% of all occupational disease compensation. It can cost you thousands of dollars a year!

THE FIRST STEP recommended to prevent dermatitis in this report is personal cleanliness, with special emphasis on adequate washroom facilities and the right cleansers. We quote:

"If a harsh soap is used on hands that have been defatted by chemicals in the shop, the result will be worse than if the worker had never washed. So make sure that the soaps you provide in your washrooms are: 1) effective but harmless in themselves; 2) handily supplied so that they serve

as reminders to use; 3) conveniently provided to eliminate mess and annoyance."

PAX-LANO-SAV Heavy Duty more than meets every requirement: (1) Years of experience in America's leading plants have proved its amazing cleansing ability . . . yet thanks to its rich formulation of lanolin and fine emollients usually found only in expensive creams and lotions, PAX-LANO-SAV Heavy Duty helps keep skin healthy despite work-contact irritants. (2) Workers like to use it—on face as well as hands—because it feels good, cannot irritate, and they can get clean quicker with less. (3) PAX "Soap Saver" Dispensers supply it most conveniently, without fuss or muss.

Let PAX-LANO-SAV Heavy Duty help stop your "Big Itch"—and all the losses it causes . . .

Look for the PAX ROOSTER—It's your assurance of a Superior Product



The PAX trademark symbolizes a deep-rooted tradition of superlative quality maintained through a quarter century of continuous research and development.

LET US PROVE PAX IN YOUR WASHROOM...NOW!

Write today on your letterhead for a free half pound sample of PAX-LANO-SAV Heavy Duty Granulated Skin Cleanser. Then at your request our representative will gladly conduct a competitive test between PAX and your present brand—let you and your workers be the judge.

There is a complete line of PAX Skin Cleansers and Special Purpose Cleansers—each the finest in its price class.

ALL PRODUCT NAMES USED ARE TRADE NAMES OF THE G. H. PACKWOOD MFG. CO.


G. H. PACKWOOD MFG. CO. • 1534 TOWER GROVE AVE., ST. LOUIS 10, MO.

Your choice of
COLOR



IN **HARD
BOILED***
Safety Hats

**STRONGER-THAN-STEEL
FIBERGLAS**

 crowns offer unlimited choice of vivid, permanent colors... with color molded all the way thru the safest crowns ever built. Shock-resisting ribbed design also available in aircraft grade aluminum.

Write for
Full Color Circular

SAVE MONEY ...save time!

One size fits all heads... reduces inventories. Fully adjustable headband and hammock; can be changed in six seconds. Self-shaping and air-cushioned for comfort.

EVERYTHING
BULLARD
IN SAFETY
*T.M. Reg.

**HARD
BOILED**

Distributors in
principal cities

E. D. BULLARD COMPANY
275 EIGHTH STREET, SAN FRANCISCO, CALIFORNIA

is a member of the American Society of Safety Engineers and the Workmen's Compensation Committee of the Pennsylvania State Chamber of Commerce. He was a member of the original committee of the American Pulp and Paper Association Safety Committee which drafted the safety code for pulp and paper mills. Later he served on the Association's subcommittee on Safety, Health and Sanitation. He is a past president of the Erie Safety Council.

Election of A. R. FISHER to the Board of Trustees of Industrial Hygiene Foundation is announced by Andrew Fletcher, president of St. Joseph Lead Company, and chairman of the Foundation's Board.

Mr. Fisher is president of Johns-Manville Corporation, New York, and has long been active in the promotion of occupational health among workers.

Appointments to the Foundation's Legal Committee have also been announced by Dr. C. Richard Walmer, managing director. New members are E. C. Starkey, office of General Counsel, Ford Motor Company, Detroit, Mich., and Clarence G. Johnson, Regional Claims Manager, Employers Mutual Liability Insurance Company of Wisconsin, New York.

The Foundation's headquarters and laboratories are maintained at Mellon Institute.

WALTER E. THIEL has been elected president of the Association of Safety Engineering Representatives of the New York State Insurance Fund. Other officers elected were Elmer Bekassey, vice-president; Nathan Feigenblatt, Jr., secretary; Smith T. Lyke, financial secretary; Henry F. Martin, treasurer; William E. Dillon, legal representative; Bartholomew Ricciardi, trustee; Edward Balkus, sergeant at arms; and Frank Rodden, executive committeeman.

One of the main objectives of the organization is to keep members informed on the latest safety techniques, by making available special engineering knowledge, new ideas and improved methods in accident prevention.

FORMATION of a new company, known as Hutchison & Associates, with offices at 612 East Moorehead Street, Charlotte, N. C., is announced by Thomas B. Hutchison. The new firm takes over the former auditing and engineering division of Gay & Taylor, Inc., and will furnish service to insurance companies in the auditing and inspection and safety engineering fields throughout North and South Carolina.

Mr. Hutchison is a member of the American Society of Safety Engineers, the North Carolina Society of Safety Engineers, and the Charlotte Engineers Club. For the past six years he has been manager of the division of Gay & Taylor which he has taken over.

The President's Medal

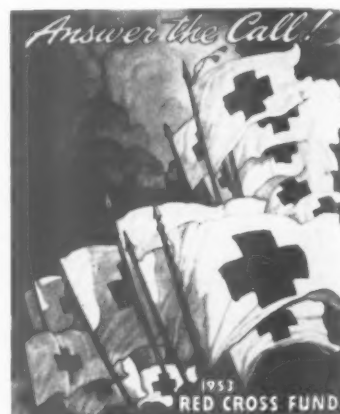
Awards made by the National
Safety Council for successful application of artificial respiration

GERALD K. FLOYD, manager, Public Service Co. of Oklahoma, Stigler, Okla.—electric shock.

MELVIN R. REAVIS, serviceman, Public Service Co. of Oklahoma, Stigler, Okla. — electric shock. Certificate of Assistance to ROLAND E. WALLACE.

ANTON OLSZEWSKI, maintenance cl. 3, Wisconsin Public Service Corp., Crivitz, Wis.—drowning.

FRED E. BROWN, lease pumper, Gulf Refining Co., Pentwater, Mich.—gas asphyxiation.



National Safety News, February, 1953

NEW SBS WATERLESS WASHSTATION*

"brings the washroom
to the worker"*

for only \$52.50 per unit

(F.O.B. Saginaw, Mich. Towel dispensers not included)

SBS-30 Waterless Skin Cleanser and new type dispenser make possible portable wash-up units that save hundreds of man-hours . . . thousands of dollars!



The SBS Waterless Washstation is a complete, self-contained hand-washing unit that requires no plumbing because it uses SBS-30, a remarkable waterless skin cleanser that safely removes practically all kinds of soils . . . even those that harmful solvents will not wash off.

saves hundreds of dollars yearly—SBS Waterless Washstations, by being located close to work areas, can increase production because they reduce the time workers must spend washing up. (Time studies show that by reducing off-the-job time, a single SBS Waterless Washstation can save you as much as \$720.00 per year.)

increases worker efficiency—In addition to saving workers' time, SBS Waterless Washstations help keep workers' hands cleaner for better health and greater efficiency in industry.

eliminates crowding and congestion in washrooms—SBS Waterless Washstations help reduce congestion in washrooms at lunch time and new-shift time because employees can wash up right at the job.

located anywhere—SBS Waterless Washstations are compact, space-saving and portable. They can be stationed close to work areas in large factories, warehouses and shops to encourage cleanliness and cut down on time consumed going to distant washrooms. Set up near outdoor operations, they provide washing facilities when no water is available.

removes nearly every soil except lacquer—SBS-30 Waterless Skin Cleanser will remove tar, paint, varnish, heavy industrial grease and grime and other hard-to-

remove soils that ordinary soap and water will not wash off. It will also take off ink, mimeograph and hectograph stains, glue and other office soils. And it eliminates the use of harsh and dangerous soaps and solvents that irritate workers' hands.

easy to use—SBS-30 is easier to use than soap and water and it removes soils faster—workers just rub it on their hands, then wipe it off along with all dirt and grime. It leaves the hands clean, smooth and soothed, protected from soreness and chapping.

The SBS Waterless Washstation is constructed of heavy steel finished in grey-green enamel. There is a removable cloth bag in base for used paper towels . . . and a handy locking storage space on top. Turret top holds SBS-30 dispenser and two paper towel containers of the type you are now using.

The polished aluminum dispenser is troublefree and lubricated by the cleanser itself. One turn of the handle dispenses just the right amount—no leakage, no soap waste. Dispenser has two-way feed adjustment . . . provides from 1000 to 1500 washes before refilling. Costs no more per-hand-wash than other types of cleansers.

Fill out and mail the coupon below to get all the facts and details about the amazing new SBS Waterless Washstation. This information will tell you all about our no-risk 30 day money back trial offer that enables you to prove to yourself with your own tests on your own home grounds exactly how much you can save. Fill out the coupon now—before you turn the page—it means money to you.

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FOR DISTINGUISHED SERVICE



National Safety Council Awards for Outstanding Records

THREE types of awards for outstanding performance in industrial accident prevention are provided for in the "Plan for Recognizing Good Industrial Safety Records" adopted in January, 1952, by the Industrial Conference and the Board of Directors of the National Safety Council.

The three types of awards are:

1. The AWARD OF HONOR, the highest award, replaces the Distinguished Service to Safety Award. It goes to industrial establishments whose experience meets rigorous statistical standards, even though it may not be injury-free. It also goes to those which complete 3,000,000 manhours without a disabling injury.

2. The AWARD OF MERIT has similar but less exacting requirements. The standards for non-perfect records are somewhat lower, and the minimum number of injury-free manhours needed to qualify is 1,000,000.

3. The CERTIFICATE OF COMMENDATION is given only for no-injury records covering a period of one or more entire calendar years and involving exposure of 200,000 to 1,000,000 manhours.

For qualifying calendar-year experience, all three types of awards are made automatically on the basis of annual reports submitted to the Council by members. The Award of Honor and the Award of Merit may also be made on special application in two types of cases:

1. Where a qualifying total of injury-free manhours is accumulated in some period other than a calendar year.

2. Where a current period of two or more years is to be used in evaluating injury rate improvement.

Publication of awards under this plan succeeds "The Honor Roll" department formerly published in the NATIONAL SAFETY NEWS. The foregoing is but a synopsis of the award plan. For a more complete and precise statement of eligibility requirements, members should refer to the plan itself. Details may be obtained by writing to Statistics Division, National Safety Council.

AWARDS OF HONOR

The Goodyear Tire & Rubber Co., England Plant.

International Business Machines Corp., Endicott, N. Y., IBM Plant No. 1.

Republic Steel Corp., Bolt & Nut Division, Cleveland Plant.

Tennessee Valley Authority, Chattanooga, Tenn., Office of Chemical Engineering.

AWARDS OF MERIT

Borg-Warner Corporation, Kalamazoo, Mich., Ingersoll Products Division.



The Oliver Corporation, Battle Creek, Mich., Plant No. 1.

Panama Canal Co., Balboa Heights, Canal Zone, Maintenance Division.

Republic Steel Corp., Central Alloy District, Massillon Works.

Republic Steel Corp., Ideal Foundry Division, Newton Falls, Ohio.

Joseph E. Seagram & Sons, Inc., The Calvert Distilling Co.

U. S. Army, Ordnance Corps, Augusta, Ga., Arsenal (Entire group).

United States Rubber Co., Fisk Cord Mills, New Bedford, Mass.

CERTIFICATES OF COMMENDATION

Republic Steel Corp., Pressed Steel Division, Stevens Plant, Niles, Ohio.

Republic Steel Corp., Union Drawn Steel Division, Hartford, Conn.

Film Contest Deadline February 23

ENTRY BLANKS have been placed in the mail for the 1953 contest conducted by the National Committee on Films for Safety. This annual contest will include motion pictures and sound slidefilms produced or released during 1952, in the fields of occupational, traffic and transportation, home, and general safety.

Suitable awards are given to sponsors of outstanding films in each classification, as determined by the committee judges. There is no charge to contestants for entries.

Contest entries must be received by February 23, 1953, at the headquarters of the National Committee on Films for Safety, 5th floor, 425 North Michigan Ave., Chicago 11, Illinois. Address William Englander, secretary, for contest forms or further information.



Ned H. Dearborn (left), president of the National Safety Council, presenting Award of Honor to Cleo F. Craig, president of the American Telephone and Telegraph Co.

BELL TELEPHONE COMPANIES RECEIVE HIGHEST AWARD OF NATIONAL SAFETY COUNCIL

Bell telephone men and women are proud of the Award of Honor presented to them recently by the National Safety Council. The award was in recognition of an outstanding record for two years.

It is no accident that the communications industry leads in safety. Telephone equipment and buildings are designed for safety. And on the wall of every Bell telephone building are these words — "No job is so

important and no service is so urgent that we cannot take time to perform our work safely."

The lineman on the pole, the driver on the highway, the operator at the switchboard, the men and women in the business offices — all have tried hard to live up to this safety creed.

We're grateful for this award and we're going to keep on trying to make the record even better.

BELL TELEPHONE SYSTEM

"A Good Place to Work"



THE SAFETY LIBRARY



Books, Pamphlets and Periodicals of Interest
to Safety Men

BOOKS AND PAMPHLETS

Management Training

Management Training, Cases and Principles. 1952. By William J. McLarney, Richard D. Irwin, Inc., Chicago. 373 p. \$6.65.

GOOD CASES for the study of industrial management are hard to come by as any training man knows. Here the author has given us 267 cases, graded as to difficulty and divided to fit the subject matter of 18 chapters.

Principles share space about equally with cases and the make-up of each chapter should insure maximum usefulness to anyone doing a training job. Each chapter consists of (1) a dozen or more cases; (2) a discussion of principles, and (3) a conference topic with ready prepared questions for the conference leader.

Chapter headings cover the field of supervision and management and are grouped under four main divisions. Part 1, the Management Team; Part 2, Job Management; Part 3, Developing the Work Team; Part 4, Maintaining the Work Team.

Mr. McLarney is Associate Professor of Industrial Management at the University of Maryland, but the material for the book was naturally developed in industrial situations where he has done a large amount of management training work. It is undoubtedly this industrial experience that has enabled him to produce a book which, not only in subject matter, but also in form, is thoroughly useful to one doing industrial training. An example is the suggestion that trainees who have considerable background in supervisory work tackle the cases first and then the principles in each

chapter, but that undergraduates and trainees with little supervisory experience study the principles first and then discuss the cases. Another sensible suggestion is that the group of trainees be allowed to look over the dozen or more cases in each chapter and select the two or three that they want to discuss.

Safety men will be gratified to know that the book contains many safety cases but that there is not a chapter on safety. At last, an industrial training author has put safety where it belongs, in the treatment of supervisory subjects along with production rather than in a separate section as a sort of side line or appendix.

Glenn F. Griffin

Chemicals

Bromine. Published by Manufacturing Chemists' Association, 246 Woodward Building, 15th and H Streets, Washington 5, D. C. 1952. 15 p. 25c. (Chemical Safety Data Sheet SD-49).

Cresol. Published by Manufacturing Chemists' Association, 246 Woodward Building, 15th and H Streets, N. W., Washington 5, D. C. 1953. 16 p. 25c. (Chemical Safety Data Sheet SD-48).

Color

Coloramics. Published by Marsh and McLennan, 231 South LaSalle Street, Chicago, Ill. 1952. 32 p. Free.

Lighting

Lighting for Industry. Published by Holophane Co., 342 Madison Avenue, New York, N. Y. 1952. 96 p. Free.

Workmen's Compensation

State Compensatory Provisions for Occupational Disease. By G. G. Manges and S. J. Davenport. Published by U.S. Bureau of Mines. 1952. 125 p. Available

from The Bureau, Publications Distribution Section, 4800 Forbes Street, Pittsburgh 13, Pa. Free. (Information Circular 7650).

MAGAZINE ARTICLES

Commercial Vehicles

Train your Drivers for the "Unexpected." By Edgar G. Quesnel. Fleet Owner. December, 1952. p. 54.

Engineers

Management, Safety and The Engineer. The Engineer Journal. October, 1952, p. 1064.

Employee Training

Employee Attitude on Safety Controls Accident Rate. J. P. McClendon. American Foundryman, December, 1952, p. 56.

Fire Protection

CO₂ Stands Fire Watch Over Switchgear Test Apparatus. By Walter E. Morgan. Electric Light and Power. December, 1952.

Don't Give up the Ship—A Study in Damage Control. By Frank A. Hanley. Fire Engineering. December, 1952, p. 1019.

They Put It Out in 37 Seconds. Chemical Engineering, January, 1953, p. 111.

Fire Prevention

Fires and Explosions Caused by Careless Use of Solvents. Fire Engineering, December, 1952, p. 1028.

Floors

Industry's Floors Repay Good Maintenance. By J. R. Hepler. The Plant. December, 1952, p. 34.

Foremen

The Role of the Supervisor in Safety Supervision. By G. W. Rexford. Mass Transportation. December, 1952, p. 32.

Foundries

Three Ways to Control Foundry Dust—Isolation—Substitution—Wetting Agents. By E. G. Meiter. American Foundryman. December, 1952, p. 53.

Gas Industry

Cite Drop in Accident Rate. American Gas Association Monthly. December, 1952, p. 20.

Gases

Analyzer Detects Gas Tracers. Chemical Engineering. January, 1953, p. 210.

Hands

The Working Man's Hand. By Dr. Sumner L. Koch. Bulletin—American College of Surgeons. January-February, 1953, p. 5.

Health

Carbon Tetrachloride Mixtures in Fire Fighting. By H. H. Fawcett. A.M.A. Archives of Industrial Hygiene and Occupational Medicine. November, 1952.

Fumes and Gases in Arc Welding. By Erik Thrysin and others. A.M.A. Archives of Industrial Hygiene and Occupational Medicine. November, 1952, p. 381.

Maintenance of Health in the Elderly Work Force. By Dr. Carl T. Olson. Industrial Medicine and Surgery. December, 1952, p. 581.

Multiphasic Screening of Longshoremen with Organized Medical Follow-up. By Dr. E. Richard Weinerman and others. American Journal of Public Health. December, 1952, p. 1552.

Occupational Disease Associated with Importation of Raw Materials. By Dr. Daniel C. Braun and Dr. John F. Osterritter. American Journal of Public Health. December, 1952, p. 1542.

Occurrence of Anthrax Bacilli in the Carpet-Work Industry in the United States. By Robert S. Lloyd. A.M.A. Archives of Industrial Hygiene and Occupational Medicine. November, 1952, p. 421.

Hospitals

Safety Saves Nurses. By Donald C. Carner. The American Journal of Nursing. December, 1952, p. 1477.

Mines

Federal Law to Prevent Major Coal-Mine Disasters, 1952. Monthly Labor Review. November, 1952.

Noise

Noise—a Shop Problem. American Machinist. December, 1952.

Physicians

The Education of the Industrial Physician. I. The Caterpillar Tractor Training Program. By Harold A. Vonachen and Milton H. Kronenberg. *II. The Case Study Method Adapted to In-Plant Training in Occupational Medicine.* By Jean Spencer Felton. Industrial Medicine and Surgery. December, 1952, p. 561.

Wire Rope

Proper Use of Wire Rope Fittings. By Walter C. Richards. The Timberman. December, 1952.

He scoffed at safety breathing equipment...



... but he finished the job wearing a

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(TRADE MARK)



"Scott Air-Pak GIVES ME PLENTY OF AIR, KEEPS ME FEELING COOL INSIDE HOT TANKS!"

An Eastern dye plant needed a painting job done on the inside of a large tank. Although the paint was of a particularly obnoxious compound, the man hired for the job scoffed at the offer of safety breathing equipment. He entered the tank, only to stay inside for six minutes. Making a second attempt to paint the interior without protection, he lasted only one-half minute. The third time he put on a SCOTT AIR-PAK with a hose attached to an air cylinder and stayed in the tank for three hours, completing the entire job. Questioned as to SCOTT AIR-PAK's operation, he said "I never knew that working inside of a hot tank could be so cool and comfortable—and safe. I'm taking no more chances!"

Hundreds of other industrial plants throughout the country have discovered that using SCOTT AIR-PAKS is the safest, most efficient way to complete work in hazardous atmospheres quickly, easily, economically.



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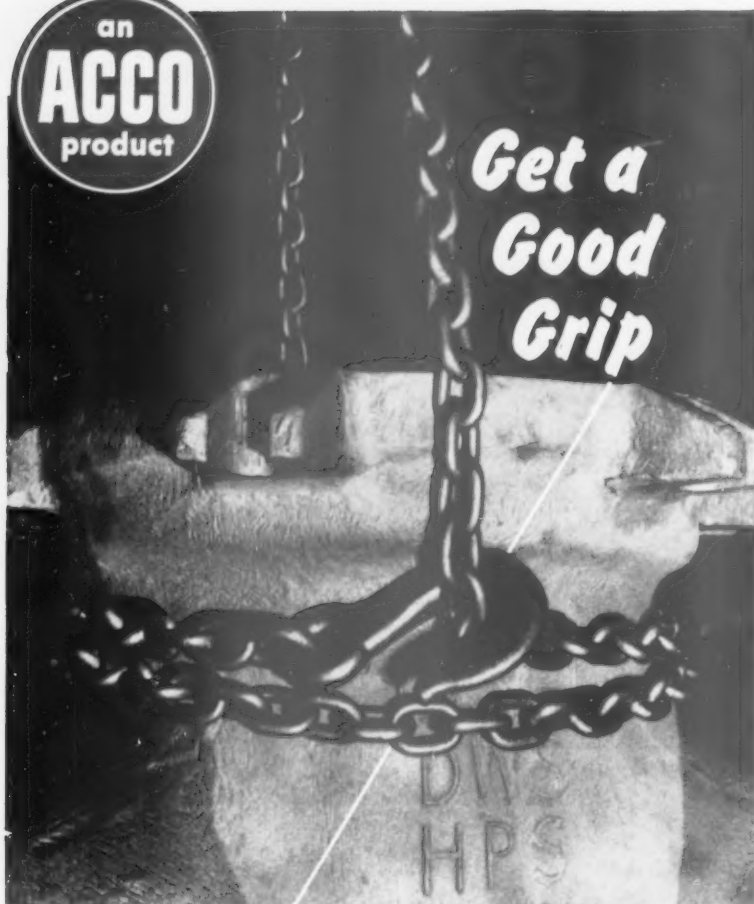
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**Award Honors for
Fire Prevention**

MEMPHIS, TENN., won the Grand Award in the United States for the best 1952 Municipal Fire Prevention Week program in the international contest annually sponsored by the Fire Prevention and Clean-Up Campaign Committee of the National Fire Protection Association. The purpose of this contest is to stimulate competition and encourage the use of Fire Prevention Week as a "spring-board" for year-round fire prevention programs. Atlantic, Ia. (Pop. 6,472) and New York City tied for second place. Louisville, Chicago, and Providence were judged next in that order of all U. S. communities entering.

In Canada the Grand Award winner was Kentville, N. S., with Ottawa, Ont., Calgary, Alta., and Hull, Que., finishing in that order. Kitchener, Ont., and Arvida, Que., tied for fifth place.

In the United States the class winners were as follows:

CLASS I (Pop. 500,000 or over): 1st, New York City; 2nd, Chicago; 3rd, Houston, Tex.; Honorable Mentions, Cincinnati, O., and Philadelphia, Pa.

CLASS II (Pop. 250,000 to 500,000): 1st, Memphis; 2nd, Louisville; 3rd, Indianapolis; Honorable Mentions, Jersey City, San Diego, and Atlanta.

CLASS III (Pop. 100,000 to 250,000): 1st, Providence, R.I.; 2nd, Hartford, Conn.; 3rd, Norfolk, Va.; Honorable Mentions, Grand Rapids, Mich., Evansville, Ind., and Wichita, Kans.

CLASS IV (Pop. 50,000 to 100,000): 1st, Anderson, Ind.; 2nd, Portland, Me.; 3rd, Columbia, S. C.; Honorable Mentions, Alameda, Calif., Bethlehem, Pa., Terre Haute, Ind.

CLASS V (Pop. 20,000 to 50,000): 1st, Richland, Wash.; 2nd, Oak Ridge, Tenn.; 3rd, Tuscaloosa, Ala.; Honorable Mentions, Salisbury, N. C., Billings, Mont., Colorado Springs, Colo., and Bloomington, Ind.

CLASS VI (Pop. under 20,000): 1st, Atlantic, Ia.; 2nd, (tied) Hopkinsville, Ky., and Stevens Point, Wis.; 3rd, Martinsville, Va.; Honorable Mentions, Fort Collins, Colo., Escalon, Calif., and Palos Heights, Ill.

In the Industrial Division of the contest honors went to the Ford Motor Company, Rouge Area, Dearborn, Mich., which was awarded first place, with the Argonne National Laboratory, Chicago, second, and the Waynes-

boro (Va.) Works of E. I. du Pont de Nemours & Co., Inc., third.

Winners in the Government Division of the contest were:

U.S. ARMY: 1st, Anniston Ordnance Depot, Anniston, Ala.; 2nd, Fort Lewis, Wash.; 3rd, Fort Bragg, N. C.

U.S. AIR FORCE: 1st, Gieger Air Force Base, Spokane, Wash.; 2nd, Narsarsuak Air Base, Greenland; 3rd, Tinker Air Force Base, Oklahoma City, Okla.

U.S. NAVY: 1st, Naval Supply Center, Oakland, Calif.; 2nd, Naval Ordnance Laboratory, White Oak, Md.; 3rd, Naval Air Station, Moffett Field, Calif.

1,566 entries were received in the 1952 Fire Prevention Week Contest from cities and towns in the United States, Alaska, Hawaii and Canada, from U. S. and Canadian industry and from the United States and Canadian Armed Forces.

Special Recognition goes to the following government installations in Canada:

Royal Canadian Navy (Pacific Command), Esquimalt, B.C., Fredericton, N.B., Experimental Station of the Federal Department of Agriculture; Royal Canadian School of Military Engineering, Vedder Crossing, B.C.; Provincial Mental Hospital, Ponoka, Alta.; Provincial Mental Institute, Edmonton, Alta.; and Fort Saskatchewan Gaol, Alta.

The International Board of Judges was composed of:

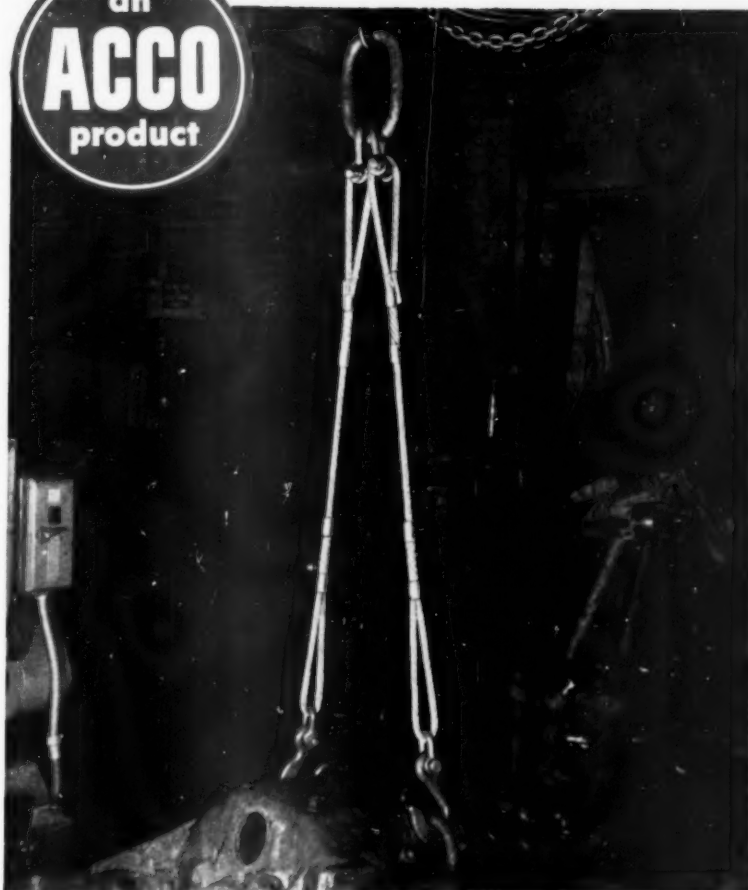
Robert C. Byrus, Director of Fire Training, University of Maryland, College Park, Md.; A. Leslie Ham, Manager, Dominion Board of Insurance Underwriters, Montreal, Que.; Chief George R. McAlpine of Oklahoma City, Okla., President of the International Association of Fire Chiefs; and H. W. Miller, United States Manager of the Commercial Union Assurance Company and Chairman of the Fire Prevention and Engineering Standards Committee of the National Board of Fire Underwriters, New York City.

EVERY OWNER should eat at least one meal a day in his own restaurant, and every manufacturer should sample the contents of his various cans once a week.

William Feather

You've reached middle age when your wife tells you to pull in your stomach—and you already have.

National Safety News, February, 1953



How ACCO REGISTERED Stock Slings Save You Money—with Safety

1 • **You Get ALL the Strength You Pay For**—DUALOC® Endings insure against any loss in the catalog strength of the preformed Green Strand wire rope the sling is made of.

2 • **You Lower Your Sling Maintenance Costs**—If damaged, any part of the sling can be replaced in your own shop with another ACCO Registered part of equal strength. No delay. You don't ship the whole sling to have one part repaired.

3 • **ACCO Slings are Stocked by Your Industrial Supply House**—His stock is based on YOUR needs. So, your sling inventory can be held to a minimum since your distributor's stock is as close as your telephone.

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Lightweight, easily adjustable, super-tough—McDonald Safety Belts assure maximum safety and working comfort whatever the job.

Famous Insta-Release Buckle—to allow split-second belt removal—is only one of the features offered by this better, safer line of belts! McDonald belts are manufactured, inspected and tested in our own plant. If desired, they can be custom-made to your specifications.

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COMING EVENTS



In the Field of Safety

Mar. 1-3, Atlanta, Ga.

Southern Safety Conference and Exposition (Atlanta Biltmore Hotel). W. L. Groth, executive director, P.O. Box 8927, Richmond 25, Va.

Mar. 3-4, Philadelphia, Pa.

Nineteenth Annual Philadelphia Regional Safety and Fire Conference and Exhibit. (Bellevue-Stratford Hotel). Walter W. Matthews, managing director, Philadelphia Chamber of Commerce, Safety Council, Architects Bldg., 17th and Sansom Streets, Philadelphia 3, Pa.

Mar. 16-21, Chicago

National Institute for Safety Council Administration, (NSC Headquarters). Noble Dutton, Field Organization, National Safety Council, 425 North Michigan Ave., Chicago 11.

Mar. 24, Madison, Wis.

Canners' Safety Institute (Hotel Loraine).

Mar. 24-27, New York

Twenty-Third Annual Greater New York Safety Convention and Exposition (Hotel Statler). Paul F. Stricker, executive vice-president, Greater New York Safety Council, 60 East 42nd St., New York 17.

Mar. 30-31, Boston, Mass.

Thirty-second Annual Massachusetts Safety Conference and Exposition (Hotel Statler). Edgar F. Copell, president-director, Massachusetts Safety Council, 31 State St., Boston 9, Mass.

Mar. 30-31, Houston, Tex.

Texas Safety Association, 14th Annual Conference (Rice Hotel). J. O. Musick, general manager, 830 Littlefield Bldg., Austin, Tex.

Apr. 9-11, Kansas City, Mo.

Central States Safety Congress (Hotel President). George M. Burns, director, Kansas City Safety Council, 419 Dwight Bldg., Kansas City 6, Mo.

Apr. 14-15, Indianapolis, Ind.

Central Indiana Safety Conference (Claypool Hotel). Jack Gunnell, Indianapolis Chamber of Commerce, 320 N. Meridian St., Indianapolis 11, Ind.

Apr. 14-16, Columbus, Ohio

Twenty-third All-Ohio Safety Con-

gress and Exhibit. (Desahler-Wallick Hotel). James H. Fluker, superintendent, Division of Safety and Hygiene, The Industrial Commission of Ohio, Columbus 15.

Apr. 20-21, Toronto, Ont.

Industrial Accident Prevention Associations, Annual Conference (Royal York Hotel). R. G. D. Anderson, 600 Bay St., Toronto 2, Ont.

Apr. 21-23, Grand Rapids, Mich.

Michigan Safety Conference and Exhibit. (Civic Auditorium). Elon J. Schantz, executive secretary, c/o Consumers Power Co., 129 Pearl St. N. W., Grand Rapids 2, Mich.

Apr. 21-23, Niagara Falls, N.Y.

Thirteenth Western New York Safety Conference (Hotel Niagara). E. C. Hohlstein, executive secretary, c/o Bufllovak Equipment Division, Blaw-Knox Co., 1543 Fillmore Ave., Buffalo 1, N.Y.

Apr. 22-24, Charleston, W. Va.

West Virginia Safety Council, Inc. Annual Conference and Exhibit. Mrs. W. C. Easley, acting managing director, 316 Masonic Bldg., Charleston, W. Va.

Apr. 23, Bridgeport, Conn.

Eighth Annual Connecticut Industrial Safety Conference. (Hotel Stratfield). H. R. Erickson, c/o Chase Brass & Copper Co., Waterbury, Conn.

Apr. 27-29, Phoenix, Ariz.

Western Safety Conference, Inc., 15th Annual Conference and Exhibit. H. E. Hodgson, secretary, 310 Luhrs Bldg., Phoenix, Ariz.

Apr. 28-30, Pittsburgh

Western Pennsylvania Safety Council, 28th Annual Safety Engineering Conference and Exhibit. Harry H. Brainerd, executive secretary, 605 Park Bldg., Pittsburgh 22, Pa.

Apr. 29, La Crosse, Wis.

Lower Mississippi Valley Safety Conference.

May 7, Watertown, Wis.

Rock River Valley Safety Conference.

May 7-9, Roanoke, Va.

Nineteenth Annual Virginia State-Wide Safety Conference (Hotel Roanoke). William M. Myers, managing director, Richmond Safety Council, 49 Allison Bldg., Richmond 19, Va.

May 11-13, Syracuse, N. Y.

Central New York Safety Conference. Walter L. Fox, manager, Safety Division, Chamber of Commerce, Syracuse, N. Y.

May 13, Allentown, Pa.

Twenty-sixth Annual Eastern Pennsylvania Safety Conference. Harry C. Woods, manager, Lehigh Valley Safety Council, 602 East Third St., Bethlehem, Pa.

May 13-15, Winston-Salem, N. C.

Twenty-third Annual North Carolina Statewide Industrial Safety Conference. (Robert E. Lee Hotel). H. S. Baucom, safety director, North Carolina Industrial Commission, Raleigh, N. C.

May 14, Green Bay, Wis.

Fox River and Lake Shore Safety Conference.

May 21, Waukesha, Wis.

South East and Lake Shore Safety Conference.

May 21-22, Duluth, Minn.

29th Annual Conference, Lake Superior Mines Safety Council (Hotel Duluth). John A. Johnson, chief, Accident Prevention and Health Div., Region V, U. S. Bureau of Mines, 18 Federal Bldg., Duluth 2, Minn.

June 11, Superior, Wis.

Upper Mississippi Valley and Lake Superior Safety Conference.

June 18, Rhinelander, Wis.

Wisconsin River Valley Safety Conference.

Sept. 17-18, York Harbor, Me.

Twenty-sixth Annual Maine State Safety Conference. (Marshall House). A. F. Minchin, secretary, Industrial Safety Division, Department of Labor and Industry, Augusta, Me.

Oct. 19-23, Chicago

Forty-first National Safety Congress and Exposition. (Conrad Hilton Hotel). R. L. Forney, general secretary, National Safety Council, 425 N. Michigan Ave., Chicago 11.

Nov. 17-18, Cincinnati, O.

Third Annual Greater Cincinnati Safety Conference. (Sheraton-Gibson Hotel). Kenneth R. Miller, executive director, Greater Cincinnati Safety Council, 1203 Federal Reserve Bank Building, Cincinnati 2, Ohio.

Green Cross News

—From page 44

enjoyed by 200 members and guests, the largest attendance of any similar meeting since the Council was organized. The NSC Public Interest Award was presented to Radio Station KELO by President Dan Dugan of the local Council. He also handed out several certificates of special recognition for community safety effort. The recipients included the Mayor, Fire Chief and Fire Inspector, the Chief of Police and the Traffic Sergeant of the Police Department. During the past few

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NSN-2-53



years the Sioux Falls Council has been growing steadily, in activities accomplishments and leadership.

Smoking in Bed

It was No. 3 on the "hit parade" of dangerous habits in New York City homes, as indicated in more than 600,000 "questionnaire confessions" made by housewives and returned to the Greater New York Safety Council, following its recent annual Home Hazard Check. Total questionnaires sent

out were 1,063,000. Housewives were asked to make the inspection and answer 25 questions. The most common "sin of commission" (No. 1) in the homes was failure to use non-skid material under small rugs.

Gift of an Auto

At the annual banquet and installation of officers of the Jacksonville Safety Council, a pleasant surprise was the presentation of an automobile to Mrs. Lennie

Humphries, for her use as manager of the Council. The presentation was made by B. N. Nimnicht, president of the Riverside Chevrolet Company of Jacksonville. Ned H. Dearborn, president of the National Safety Council, was the banquet speaker. A reception preceded the dinner and dancing followed the program.

Springfield Expansion

The executive board of the Hampden County Accident Prevention Council has authorized an official change of name for the organization. In the future it will be known as the "Safety Council of Western Massachusetts" and the expansion will cover the three nearby counties of Franklin, Hampshire and Berkshire in addition to Hampden County. During 1953 the Council will observe its 30th anniversary and Manager Jim Williams reports that big plans are already under way for a fitting observance of "Thirty Years of Safety."

Woman President for Rochester

Mrs. Irene L. Muntz, director Home Service Department, Rochester Gas and Electric Corporation (N.Y.) was elected president of the Safety Division of the Rochester Chamber of Commerce at the 39th Annual Meeting of the Council on December 4. Mrs. Muntz has been active in Rochester Council affairs for several years and has been a prominent speaker and panel participant at various Home Safety sessions of the Annual Safety Congress in Chicago.

Employees Write Slogans

Alarmed by the upswing in plant accidents in the Pawtucket, R. I. area, the Blackstone Valley Safety Council wrote to its members—and prospects—calling attention to the high frequency and severity rates and offering the Council's facilities to help spotlight the increase among plant employees. The Council suggested several plans, including an employees' slogan contest. The New-mans-Crosby Steel Company promoted such a contest and were surprised at results, for nearly



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every employee contributed at least one entry. Cash prizes spurred the contest and the first place winner carried off the \$25 check with this one: "Accidents are rare to a man using care." Manager John J. Booth of the Safety Council was one of the judges. Another slogan that caught the fancy of the judges was "Careless ways bring unhappy days."

1100 at Delaware Meeting

There were so many reservations for the annual meeting of the Delaware Safety Council, that Manager Jim Ashton found it necessary literally to "go out and hire a hall." More than 1000 persons attended the meeting and Wilmington's leading theatre "The Playhouse" had to be leased for the occasion. Among the officers reelected were Irene duPont as chairman of the board of directors and Reynolds duPont as president. Prior to the meeting Tom A. Burke, NSC Field Organization, was the guest of honor at a dinner given by the Board and later spoke at the annual meeting on "New Horizons in Safety."

Formica Award

Before a representative group of Cincinnati's industrial leaders and city officials, Earl F. Campbell, director NSC Field Organization, presented the Council's "Award of Honor" to the Formica Company, Winton Place Plant, for attaining a safety record of 3,000,000 man-hours without a lost-time injury. The award was given to Mr. D. J. O'Connor, president of the company, as "a fine example of co-operative effort by management, supervision and labor."

The finest spur to accomplishment is to have someone say it can't be done.

Anybody can meet expenses—the real trick is to avoid them.

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Three hard-hitting salesmen to sell industrial safety equipment. Draw and commission. Must have car. Territories open: New Jersey, New England and Eastern Seaboard. Address Box 429, NATIONAL SAFETY NEWS.



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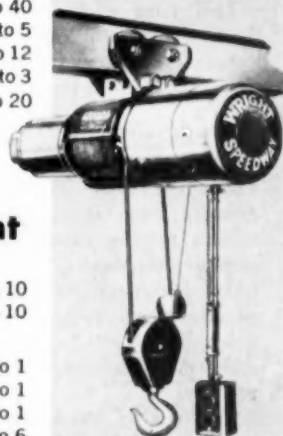
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SMALL BUSINESSES and ASSOCIATIONS



By A. M. BALTZER

Director, Small Business and Associations Program, NSC

Hospital Program Expands

More headway is being made in the non-manufacturing field through expansion of the unusual service jointly sponsored by the American Hospital Association and the National Safety Council. This \$10 per year accident and fire prevention service now reaches about 1,000 hospitals.

The service differs slightly from regular Council membership. The hospitals receive a monthly *News Letter*, a basic safety manual, monthly instruction cards, posters, technical papers and special releases.

This joint effort fully utilizes the Council's technical and educational facilities and the promotional facilities of the association.

Foundrymen Mold Safety Too

THE AMERICAN FOUNDRYMEN'S SOCIETY has taken a big step toward helping small companies reduce accidents. Their safety training courses for foundry supervisors have been presented in Chicago and will be presented in other industrial areas around the country.

The course was developed by the Safety Committee of the AFS and is supervised by William N. Davis, director of safety, hygiene and air pollution for the Society. It can be presented in either a two-day session, such as held in Chicago, or in a series of night sessions totaling about 20 class hours.

The Society headquarters provides instructors from the larger companies, from insurance com-

panies and from organizations such as the National Safety Council. A kit of materials includes literature developed by the Safety Committee plus safety manuals and foremanship training material published by the U. S. Department of Labor, larger foundries, insurance companies and the National Safety Council. Demonstrations play a big part in the conference-type classes.

Reaction to the course has been very favorable. The subject matter is specific, the instructors talk the foundry man's language and emphasize the relationship between safety and efficient production.

Launderers Plan Accident Cleanup

The Institute of Industrial Launderers, Washington, D. C., is

another non-manufacturing association, serving small business, which is planning a full-scale attack on accidents in their industry. Under the direction of John W. Gibson, consultant on public relations and safety, the Institute has planned a long-range program which is expected to help their industry and the many industrial safety directors who believe that clean and fire-safe work clothing and safety equipment is a necessity.

Within the past few months the Institute started several major activities:

1. Took out the Council's group service membership so that they can redistribute Council materials to approximately 6,000 employees in 110 laundries.
2. Set up the famous "gorilla" exhibit at the National Safety Congress.
3. At their 20th Annual Convention in Chicago November 11-15 included two talks on safety.
4. Employed a safety engineer to handle details of the program.
5. Widely distributed the 24-page King Wrong booklet which gives specific hazards of oil or chemical soaked clothing and safety equipment. The booklet urges users of industrial clothing to get help on their clothing problems from members of the Institute. If this isn't a good, practical start for the association-wide program then we have never seen one!



Ray Bonneau, Inland Steel Company, demonstrates fire hazards of overfusing to 14 foundry supervisors at Safety Training Course of American Foundrymen's Society.



All over your building,
fire sets its traps. In dip tanks,
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Walter G. King, NSC Past President, Dies

WALTER G. KING, past president of the National Safety Council and a pioneer in eye protection, died in Chataqua, N. Y., January 14. He was 92 years old.

Born in 1860 in Warren, Ohio, in 1881 he joined the Julius King Optical Company, a firm founded by his father in Cleveland, and later moved to New York. Beginning as a salesman, he became vice-president in 1892 and president in 1913. In 1923 the firm was merged with American Optical Company and he became the company's director of safety.

Mr. King's part in the development of impact and welding goggles dated back to 1906 when he noticed that thousands of artificial eyes were being sold in industrial centers. Upon investigation he learned that most of them were for workers who had lost eyes in accidents. In cooperation with optical company technicians he developed safety goggles with lenses of thick plate glass.

Crude as they were, in a month's time these goggles saved 20 eyes in plants of American Steel Foundries which had ordered six dozen pairs for a trial test.

Mr. King was director of the National Safety Council, 1921-50 and served as president, 1926-27. Over the years, he has also been a director and vice-president of the American Museum of Safety,



WALTER G. KING
1860-1953

Chairman of Metropolitan Chapter, American Society of Safety Engineers, and president of the Veterans of Safety.

In recognition of his valued work in eye protection and his contributions to the cause of safety generally, he was awarded many honors. Among them were honorary life membership in the National Safety Council and the Louis Livingston Seaman Medal of the American Museum of Safety.

Surviving are the widow, two sons, Walter and Clifford, and a daughter, Mrs. Frank G. Karslake. Funeral services were held in Cleveland, January 16.

New Bulletins on Hexachlorophene

Five new and comprehensive technical bulletins have just been published by Sindar Corporation on G-11^(R) (Brand of Hexachlorophene). These bulletins bring to six the number of technical papers released on G-11, the first of the series being Technical Bulletin H-1, "An Annotated Bibliography," issued in May 1952.

G-11 is today being widely used in soaps and detergents, as well as in various cosmetic products. Complete data on these uses, and information on the chemical, physical, toxicological and bacteriolog-

ical properties are given in these new bulletins, each of which contains references to substantiate all information given. In addition, Technical Bulletin H-5 gives formulas for various types of cosmetics in which G-11 may be used, such as stick and liquid deodorant colognes, hand creams and others.

The new bulletins are:

Technical Bulletin H-2—Chemical and Physical Properties.

Technical Bulletin H-3—Toxicology.

Technical Bulletin H-4—Bacteriological Properties.

Technical Bulletin H-5—Use in Cosmetics.

Technical Bulletin H-6—Use in Soaps and Synthetic Detergents.

National Safety News, February, 1953

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MODEL 440 With comfortable soft plastic frame

MODEL 440 methacrylate lens resists extreme impact. **OPTICALLY CORRECT.** No distortion. **CLEAR OR COLORED** lenses available (light, medium or dark green). **VENTILATION** available direct or indirect, as desired.

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MODEL 441. Same frame with acetate lens for light weight flexibility.

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RETRAX TEMPLES, plastic or metal, telescope for close fitting comfort. Club temples also available.

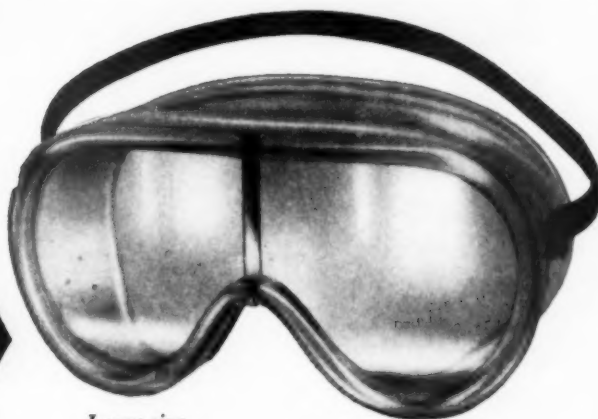
REPLACEABLE LENSES in four styles give multi-purpose flexibility. Available clear or in four colors (light, medium and dark green, and cobalt blue).

CHEEPEE Low cost, one-piece coverall

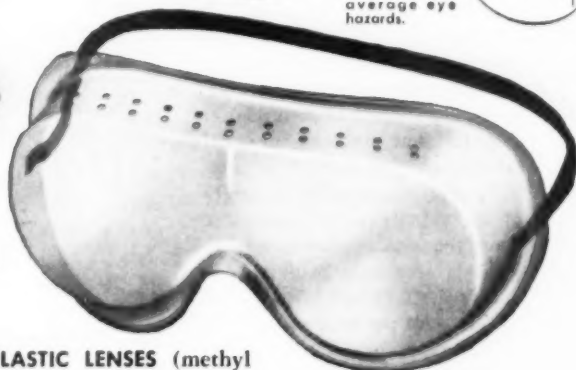
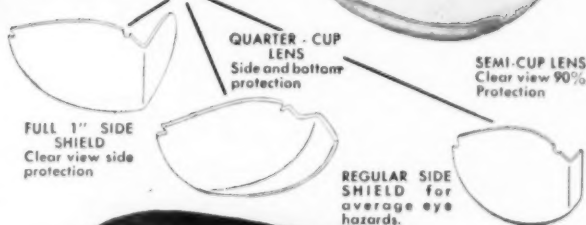
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INDUSTRIAL HEALTH



Abstracts of current literature
on Industrial Hygiene, Medicine, and Nursing

BY F. A. VAN ATTA
Industrial Department, NSC

Temporary Deafness

Temporary Changes in Acuity of the Human Ear Following Exposure to Intense Noise, by John B. Gallagher and John E. Goodwin. The AMA Archives of Industrial Hygiene and Occupational Medicine 6:332-338 (October 1952).

THERE HAS BEEN a number of investigations of the effects of exposure of the human ear to intense noise for comparatively short periods and the investigators are generally agreed that it produces a temporary hearing loss which may be moderate to marked but with a gradual complete recovery to normal acuity. It is also generally agreed that the loss in acuity is in the higher frequencies, particularly in the region of 4,000 to 6,000 cycles per second.

Two of the investigators have suggested that there is a relationship between the temporary deafness which can be produced experimentally and the permanent deafness which may result from long-time exposure to noise of high intensity. These have been only suggestions and such relationship has not yet been definitely established.

In this investigation a number of individuals were exposed for short times to approximately 115 decibels of a noise with approximately even intensity from 25 to 7,500 cycles per second.

The experimental subjects presumably had normal hearing. They were tested with a pure tone audiometer before the experiment started and used in the experiment only if they had no threshold more than 15 decibels below normal at any frequency or more than 10 decibels below normal at more

than one frequency. A total of 47 individuals ranging from 18 to 30 years of age were subjected to the intense noises in one or both ears. There was a small group each of whom had one normal ear and one ear showing early or minor abnormality and which consequently could be tested in only one ear.

After an exposure of 10 minutes to the noise, the hearing acuity of each individual was tested at 2,048; 4,096 and 8,192 cycles per second as rapidly as possible. The pre-exposure level of acuity was always attained for the lowest frequency within 30 minutes after exposure and within the same 30 minutes the acuity was practically up to normal at the two higher frequencies. Loss of hearing from the noise exposure was greatest at 4,096 cycles per second in most instances but in some was more severe at 8,192 cycles per second. The losses were generally reproducible within about 5 decibels on any given individual.

The hearing losses at 4,096 cycles per second were such that the test group could be readily divided into three distinct subgroups. The largest of the three groups was those whose ears showed relatively low susceptibility to noise and who, in this series of experiments, did not show any greater initial hearing loss than 17 decibels.

The second group were those whose ears were highly susceptible to noise at this frequency and who showed hearing losses of 22 to 40 decibels with a mean of 32½ decibels. The third group, with the pre-existing slight hearing loss in one ear, showed the same results in the other ear as did the more susceptible group of those with normal acuity in both ears.

This group of experimental subjects is small for drawing any very general conclusions, but it is of interest that all of the individuals who showed a minor loss in one ear had previously been exposed to excessive noise. Those with the more susceptible but normal ears had never been exposed to high noise levels before the experiments. The results are sufficiently suggestive to justify the further investigation of the possibility that measurement of the temporary loss produced by a short exposure to high frequency noise may give an index to the permanent loss which will be produced by chronic exposure.

Pneumoconiosis

Pneumoconiosis Due to Diatomaceous Earth, Clinical and X-Ray Aspects, by Reginald H. Smart and Walter M. Anderson. Industrial Medicine and Surgery, 21:509-518 (November, 1952).

Disabling human pneumoconiosis due to work in diatomaceous earth or kieselguhr was reported by Legge and Rosencrantz in 1932. Among 118 workers examined in a California diatomaceous earth plant they found 68.5 per cent with pneumoconiosis due

—To page 103





SUPERSTITIOUS

....about 3 on a match?

Desmond Dribble, rising young executive, lit cigarettes for the boss, the boss's daughter and himself—on one match.

Next morning the boss took a bad prattfall on the newly waxed floor of his office. Before he was whisked away to the hospital, he pointed an accusing finger at Dribble and shouted, "You're fired! And stay away from my daughter, too!"

Dribble did some hurried research. Bursting into the boss's room, he said, "Don't blame the match, boss. It's our floor wax. Yours was the thirty-second slip-fall we've had in the past 10 months."

• • •

Superstition aside, we'll be glad to show you how LEGGE Safety Maintenance prevents slip-fall accidents, saves you money. Clip the coupon today for full information. Walter G. LEGGE Company, Inc., 101 Park Ave., New York 17, N. Y. Branch offices in principal cities. In Toronto, J. W. Turner Co.



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"Know something else? Floor maintenance costs you a fortune in labor and materials. I've taken the liberty of calling in a LEGGE Safety Engineer."

Within a few months Dribble was vindicated. With LEGGE Safety Polishes, slip-falls stopped. And maintenance costs dropped to almost half. Because the LEGGE Polish stayed on the floor 8 times as long as wax, without the need for stripping and reapplying.

Dribble? A promotion and a trip to Niagara with the boss's daughter. Just before they left, the boss lit cigarettes for them. Lit his own, too—on the same match.

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- ☐ Please send a reprint of this advertisement.
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Dust Suppression

(From page 27)

possibility of so doing can be determined only by experts in the process concerned. It demands a wide knowledge of the technical or scientific principles involved in the industry, coupled with great flexibility of mind and the faculty of devising new, and perhaps unconventional working methods.

A good deal of dust may result from dressing or cleaning steel castings after they have been removed from the mould. This dressing is necessary because some of the moulding material adheres to the casting, and must be removed by pneumatic chisels.

If it were possible to make castings in such a fashion that none of the moulding material adhered to the steel, this dusty cleaning process could be avoided. This opens up a wide field of investigation which the British Steel Founders' Association is vigorously exploring.

This particular work is regarded as long-term policy, and in consequence other methods of eliminating the dust are being tried in the treatment of castings. One successful development has resulted from changing the method of cleaning. A flux injected oxy-acetylene burner is now being used to clean the casting in place of the pneumatic chisel. This has not eliminated the cleaning process, but it has offered a method of cleaning which, in certain cases, may eliminate the dust cloud.

These examples indicate a way of dealing with the dust problem which is far too often ignored, and emphasize the need for a close examination of all dusty processes with a view to eliminating the dust. Even where there appears to be little chance of immediate success, the ideal should never be forgotten, and the installation of a dust-control system should not be allowed to stifle efforts to attain a dust-free process.

The second object in dust elim-

ination is, perhaps, less ambitious than the first. This is a change in the process to reduce the amount of dust generated. It is always important to reduce, as far as possible, the dust which is generated, because the smaller the residual dust cloud can be made, the easier it becomes to control it.

One example of this approach occurs in the efforts that founders are making to reduce the amount of core binder used in moulds. The atmospheric impurity produced by the core binder is in the form of fumes, not dust, but the principle remains the same. Once again no general suggestions can be made, because each industrial process must be treated by a specialist who understands all the factors involved.

This discussion has been concerned only with the reduction of the total amount of dust which must be dealt with by control methods. But there may be another very important factor. Some dusts are dangerous to health, and the total dust cloud may contain a dangerous fraction. In this case, the outstanding reason for eliminating part of the dust lies in the fact that the health risk can be removed if the dangerous fraction of the cloud can be eliminated.

A well-known dangerous dust is free silica (SiO_2). It is known that in many industrial processes where free silica dust is likely to be produced, it will be accompanied by other dusts which may not be dangerous. Efforts are being made, therefore, to eliminate the free silica fraction of the airborne dust cloud. One example of this is discontinuing the use of silica flour as a parting powder. Other powders are used which may produce just as much dust, but the dust is innocuous.

Control of Dust

When the limit of practicable dust suppression has been reached

by the more positive methods of eliminating dust at source, there will still remain ample scope for the application of control methods in cases where it is impossible to prevent the formation of the dust cloud. The common method of dust control is by ventilation, and this may be employed as local exhaust ventilation or as general ventilation, or more probably as a duplex system using both.

It is of some practical importance to appreciate that local exhaust ventilation and general ventilation form two complementary parts of one ventilating system. They should therefore be designed together in new buildings, and when local exhaust ventilation must be fitted into an existing room the whole system should be integrated wherever possible.

Local Exhaust Ventilation

When the evolution of dust has been prevented as far as possible, the next logical step is to design local exhaust ventilation. This should prevent the dust cloud from spreading into the general atmosphere of the room.

Two advantages accrue when this is done. In the first place, the dust can be removed more effectively and more cheaply if it can be contained in a small space and exhausted as a concentrated cloud. In the second place, general ventilation can be designed on the assumption that very small amounts of dust will be present in the general atmosphere. This implies that a relatively small volume of air will have to be handled. Capital costs will fall, and equally important, heating costs will be reduced also.

Dust-producing processes should always be housed in buildings designed to facilitate ventilation. More emphasis should be laid on the simple fact that ventilation is cheaper and better in a properly designed building. Ventilation of a dusty process often means that large volumes of air will be extracted from the building. This in turn means that heat loss in the

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**SHUT DOWN
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WAIT UNTIL ALL
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THIS ELEVATOR
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CAUTION
DO NOT OPERATE
THIS MACHINE
WITHOUT
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outgoing air will be high. The building should always be constructed of materials having good thermal properties to ensure minimum heat loss through walls and roof. Heating should, therefore, be considered part of the ventilating problem.

If the processes involve furnaces or other heat sources, the general ventilation will be taken up from floor to roof, and dust and fumes will rise. It is necessary, therefore, to have a roof which is well insulated and warm. This is because the velocity with which hot dust and fumes rise is a function of their temperature.

As the hot column rises, it cools, its upward velocity decreases, and as it moves more slowly it becomes more susceptible to stray drafts which tend to dissipate it throughout the room. If it meets a cold roof or cold air strata, it may be cooled sufficiently to start falling again.

In this case, the roof fans will be trying to extract fumes and dust in an upward direction at a level where these fumes are naturally falling. If the roof is both high and cold, the hot rising column may be chilled to the temperature of the surrounding air before it reaches the roof. Then it will cease to rise, and will level out to form a horizontal layer of dust which will float in the air. It is very difficult to extract this layer if the fan inlets are a few feet above it.

With hot dusty processes the roof should not be flat, because rising columns of hot dust and fume impinging on a flat ceiling will billow outward and spread rapidly. A ridge roof, which will convey the fumes to a high point at which the fans can be placed, will offer far better ventilation.

It is not possible to lay down rules for general application and much more information is still needed. For example, a careful survey of the temperature gradients throughout a building which contains furnaces might well show the ventilating engineer where to place his fans to assist the natural

flow of hot, dust-laden air.

In new construction, ventilating engineers should work in consultation with the architects. Cooperation of this kind enables the ventilating engineer to control the incoming air as well as the extracted air; whereas if the ventilating system is added to an existing building he can often control only the outgoing air, which imposes limitations on the whole system.

Only buildings designed for hot processes and upward ventilation have been discussed. Different considerations may be present if the processes are cold, or if the general ventilation system is designed to operate downward from roof to floor. Nothing has been said about arranging the building so that a process needing local exhaust ventilation is near an outside wall to permit short ducts between process and dust arrester.

General Ventilation

General ventilation should not be considered until all specific points of dust or fume production have been dealt with individually, either by local exhaust ventilation or by other methods. Cheap and effective general ventilation becomes possible only when large concentrations of impurities have been prevented from diffusing throughout the atmosphere.

General ventilation should not be used to scavenge a polluted atmosphere. It is highly improbable that it would perform such a function, and even if it did, the dust would have been breathed by the occupants of the room before being extracted. In addition, large quantities of air have to be handled, and ventilation costs rise steeply. The heating of the building will become progressively more expensive and less efficient.

It follows, therefore, that general ventilation should be designed to deal only with small quantities of residual atmospheric impurities after the bulk of the dust has been disposed of at source. If this has been done by local exhaust ventilation the general ventilation should

be designed to balance the local systems.

Upward Ventilation

The commonest form of general ventilation is upward ventilation, extracting at the roof. It is also probably the most practicable form in buildings containing scattered sources of heat. In these cases, however, it is desirable that the ventilating engineer should know the method of generation of the dust or fume, its initial temperature, its natural method of propagation or flow, the path it will take and its velocity along this path.

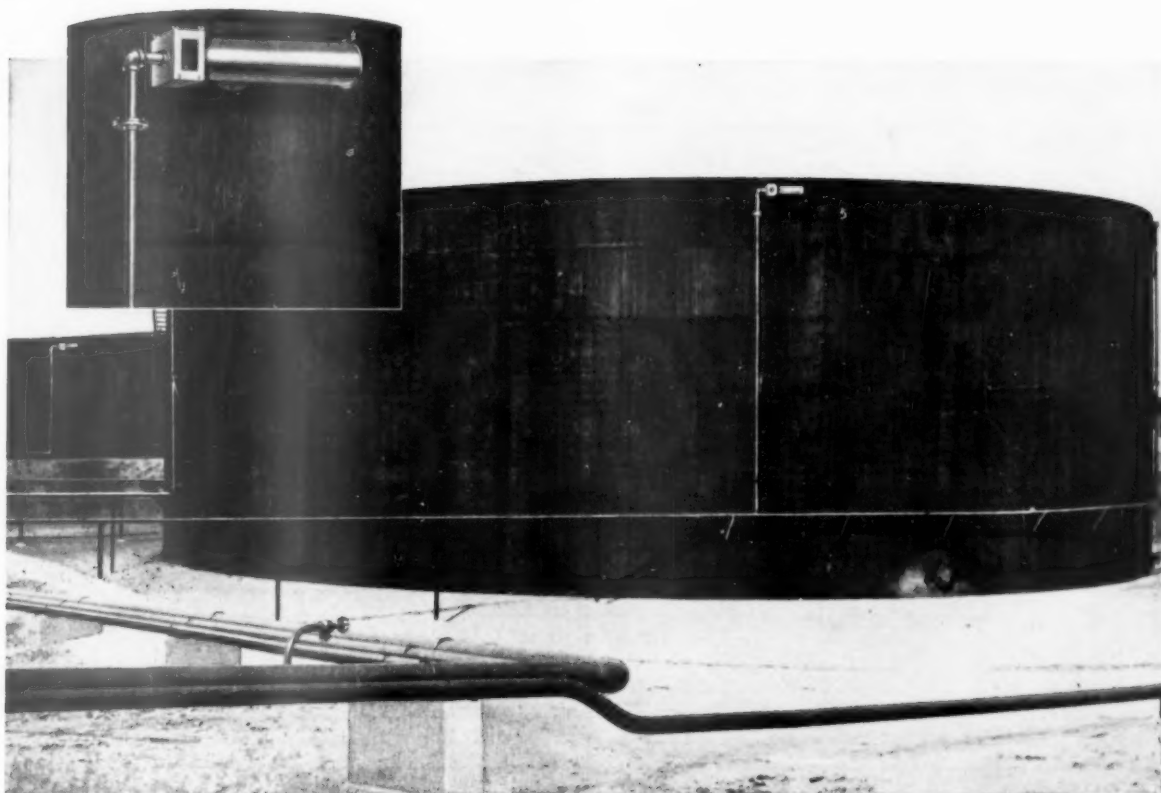
It is evident that the upward extraction of rising air demands a vertical path from the point of origin of the impurity to the fan on the roof. Quite apart from the undesirability of allowing the fumes to spread throughout the room, less ventilation air will be needed to extract a concentrated column which is rising naturally and rapidly to the fan.

Impurities can usually be most easily prevented from spreading by segregating dusty processes in separate buildings. If this is not possible, partitions may be hung from the roof and extended downward as low as possible. This will ensure that warm rising dust and fumes pass the lower edge of the partitions before they cool sufficiently to lose their velocity. They will subsequently be contained, physically, by the partitions as they rise more slowly toward the roof fans.

To prevent dust from spreading, it is essential to control eddy currents and stray drafts. Drafts which are allowed to dissipate rising columns of air may completely vitiate the general ventilation system.

This point is of still greater importance in buildings containing furnaces, where particularly strong eddy currents may be set up by natural convection. It should not be forgotten that furnaces may set up such strong cross currents that a badly de-

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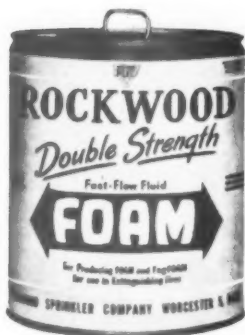


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Features Impinging Jet Action . . . Cuts Time And Cost Of
Fire-Fighting . . . Is Easy To Install And Inspect***

In the new Rockwood Double-Barrelled FOAM Maker Chamber, internal impinging jets discharge into two concentric barrels, one within the other. Providing a longer mixing time in a more compact unit, this patented construction dynamically mixes air, water and FOAM liquid — producing a finer bubble structure and a more heat-resistant FOAM blanket that puts out oil fires faster and more economically.

Compactness of chamber design and elimination of supporting brackets enable easy installation from the tank's exterior. Nozzle, vapor seal, and air intake screens are readily inspected from the top of the tank. Rockwood Double-Barrelled FOAM Makers are available in a wide range of sizes to meet existing FOAM standards with maximum efficiency and economy.



Rockwood's new **Double Strength Foam** puts out fires in flammable liquids faster and at lower cost. Three parts FOAM liquid mixed with 97 parts water form a smothering foam blanket which quickly reseals if broken. Double Strength FOAM liquid is more fluid, faster spreading and flows freely at sub-zero temperatures (-15°F). It's quicker to put into action, covers burning surfaces faster, seals off combustible vapors completely and flows freely around obstructions. This foam blanket has proved its ability to extinguish large spill fires in gasoline with maximum speed and safety to firemen.

Rockwood's Custom Engineered Proportioning Systems are used to proportion the necessary discharge through FOAM nozzles. Spill fires in an oil refinery or fires in oil storage tanks require special proportioning systems. Custom engineered proportioning systems to meet these requirements are a Rockwood specialty.



ROCKWOOD SPRINKLER COMPANY

Engineers Water . . . to Cut Fire Losses

**ROCKWOOD SPRINKLER COMPANY
72 HARLOW STREET
WORCESTER 5, MASS.**

Please send me more complete information on the new Rockwood Foam Maker and Chamber explaining in detail its operation and application.

Name
Title
Company
Street
City
Zone, . . . State

Unit First-Aid Kits —From page 39

DESCRIPTION OF UNIT ITEMS	UNIT SIZE *	ITEMS PER PACKET	10-UNIT KIT										16-UNIT KIT										24-UNIT KIT										36-UNIT KIT								
			INTERSTATE BUSES	RAILROADS GENERAL	RAILWAY POST OFFICE	SCHOOL BUSES	PUBLIC UTILITIES	TELEPHONE	PETROLEUM GENERAL	PIPE LINES	CONSTRUCTION	UTILITY CONSTRUCTION	TRUCKING	MINING & QUARRIES	STATE HIGHWAY DEPTS.	STATE POLICE	CAA AIRLINES	SCHOOL BUSES	PUBLIC UTILITIES	TELEPHONE	PETROLEUM GENERAL	PIPE LINES	CONSTRUCTION	CHEMICAL	CAA AIRLINES	SCHOOL BUSES	PUBLIC UTILITIES	FIRE DEPARTMENTS	PETROLEUM GENERAL	PIPE LINES	CONSTRUCTION	BRIDGE CONSTRUCTION	CHEMICAL	MARINE	LOGGING	PUBLIC UTILITIES	FIRE DEPARTMENTS	OILWELL DRILLING No. 1	OILWELL DRILLING No. 2	OILWELL DRILLING No. 3	MINING & QUARRIES
Adhesive Bandages	A	16	2	1	2	2	2	1	2	3	1	2	2	1	1	2	3	2	3	2	2	2	2	2	4	4	3	3	4	4	4	3	2	2	4	3	5	5	4	4	
Burn Compound 1/8 oz.	A	6	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Burn Compound 3/4 oz.	A	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Cresote Burn Wash 4cc	A	6	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Burn Solution 2 oz.	AA	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Petrolatum Gauze 3" x 18"	A	4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Ammonia Inhalants	A	10	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Aromatic Ammonia 2cc	A	4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Antiseptic Swabs	A	10	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Antiseptic Applicators 3 1/2cc	A	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Antiseptic Applicators 10cc	A	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Tr. Green Soap 1 oz.	AA	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Eye Packet—Pads, Strips, 1/8 oz. Oint.	AA	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Eye Packet—Pads, Strips	A	4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
2" Bandage Compress	A	4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
3" Bandage Compress	A	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
4" Bandage Compress	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Tourniquet	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Tourniquet & Forceps	A or AA	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Tourniquet, Forceps & Scissors	AA	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Triangular Bandage 40"	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Wire Splint	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Gauze Bandage 2" x 6 yds.	A	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Gauze Bandage 4" x 6 yds.	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Gauze Pads 3" x 3"	A	4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1			

*A size equals 1 unit space of 5/8"; AA, 2 unit spaces or 1 1/4"; AAA, 3 unit spaces or 1 3/4".
Cresote burn wash, poison ivy ointment, insect repellent, and snake bite packet are optional.
If one of them is needed, it replaces one or more of the repeated items in the "standard" kit.

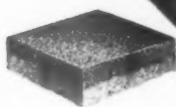
For example, see kit assortments 1, 2 and 3 shown for oil well drilling.
The above chart is based on federal regulations and surveys of the most common assortments used.
No attempt has been made to meet all local conditions or all state or municipal regulations.

Figure 5. Kit sizes and combinations of contents for various industrial operations.

—To page 72

**TOUGH FLOORS
FOR TOUGH CONDITIONS**

FEREM FLOORS



These dense, slip-resistant heavy duty floors show no noticeable wear and involve practically no upkeep costs, even under abrasive traffic and shock. Such concrete floors are constructed with Ferem, the "Blue Temper" component in the floor topping (replacing sand, stone and silica). For heavy duty floors, loading platforms, etc., in newly constructed buildings, or when replacing damaged concrete areas. Ferem is resistant to corrosive solutions and the wet floor conditions of many industries.

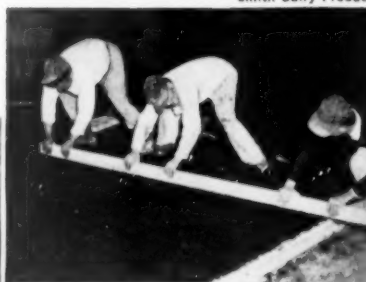


BLUE
TEMPER

Smith Dairy Products Co.



Pacific Screw Products Corp., Los Angeles



Petelinz Dairy, Newburgh, N. Y.

USED BY

Breweries
Beverage Plants
Distilleries
Dairies
Packing Houses
Canning Plants
Chemical Plants
Industrial Plants
Municipal Plants
Paper Mills
Railroads

A. C. HORN est. 1897
CO., Inc.

Manufacturers of materials for building maintenance and construction
LONG ISLAND CITY 1, N. Y. • Los Angeles • San Francisco • Houston
Chicago • Toronto SUBSIDIARY OF SUN CHEMICAL CORPORATION

National Safety News, February, 1953

A. C. HORN COMPANY, INC.,
Long Island City 1, N. Y.

Please send me ☐ complete data on
FEREM FLOORS



☐ free copy of your
106-page Construction
Data Handbook



NS-53

NAME _____ TITLE _____

FIRM NAME _____

ADDRESS _____

CITY _____ STATE _____

EYE WASHING FOUNTAIN



SAVE EYES!



Leading industrial doctors advise immediate washing with plenty of running water as the best first aid treatment for any chemical in the eyes. Records prove that washing with water for ten minutes or more, close to the accident, is necessary to reduce or eliminate eye damage.

Forehead operation leaves hands free to open eyelids so water can be directed wherever chemicals might be lodged. Sanitary white baked enamel bowl is resistant to most fumes.

Over 500 industrial plant installations have been made to date.

Write For Details.

VALVE
Chain Operated
Quick Action
Self-Closing

NEW EMERGENCY SHOWER



The B & A Shower is the quickest and most satisfactory way to saturate a worker with gallons of water the instant an accident occurs, to prevent a disfiguring burn—even a fatality.

Special shower head, no holes to clog—can be used where unfiltered water prevails.

Write For Details.

GLASS SLIVERS AND CHEMICAL IN EYES!

DISFIGURING FACIAL CUTS AND BURNS!

CUTS AND CHEMICAL BURNS ON ARMS AND BODY

THIS HAPPENS WHEN UNPROTECTED GLASS BOTTLES ARE BUMPED



**5 PINT
1 GALLON
5 GALLON**

NEW LOW COST B & A SAF-T-BAGS

are widely used for the safe handling of glass bottles containing harmful chemicals; also the storage and recovery of expensive serums, biologicals, and other costly products.

Painful cuts, disfiguring burns, loss of eyesight, or even a fatality, do result from corrosive liquid splash and flying glass when unprotected bottles shatter.

Write For Details.

BENSON & ASSOCIATES, INC.

P.O. Box 7542, Dept. N.S., Chicago 80, Ill.

Unit First-Aid Kits

—From page 70

for all local or state regulations have not been included in the chart. (See paragraph 9.)

First Aid Training

12. First aid should stop at first aid. It is intended to accomplish only what the term implies: temporary aid and comfort to avert further complications in an emergency until professional medical attention can be obtained. Unit first-aid material lends itself readily to this use.

13. Each work group should have in it at least one individual qualified to give first aid. The extent of the training and the number of persons to be trained is determined by the multiplicity of first-aid problems likely to be encountered; e.g., hazards of the occupation, the location of the operation in relation to immediate medical attention, and the size of the work unit. One person should coordinate all first-aid activity. This may be either the company physician or nurse or the safety man or someone who has had ad-

vanced training in first-aid, preferably an instructor's course.

14. Instruction is available, free of charge, from the American Red Cross Chapters, U. S. Bureau of Mines, American Petroleum Institute, certain state labor departments, and in Canada through the St. John's Ambulance Association. The American Red Cross instruction is the most universally available. It includes three courses:

- a. Standard (22 hours)
- b. Advanced (12 hours additional)
- c. Instructors' Course (15 hours additional)

Both the American Red Cross and the U. S. Bureau of Mines systems offer the opportunity to train certain key personnel as instructors, who, in turn, can train others in locations and at times most suitable to an organization's operations. The Red Cross also offers refresher courses which should be attended every year or two by those who have had first-aid training.

15. Considerable evidence indicates that the first aid training for foremen and workmen alike assists the safety program with a reduction of both injury frequency and

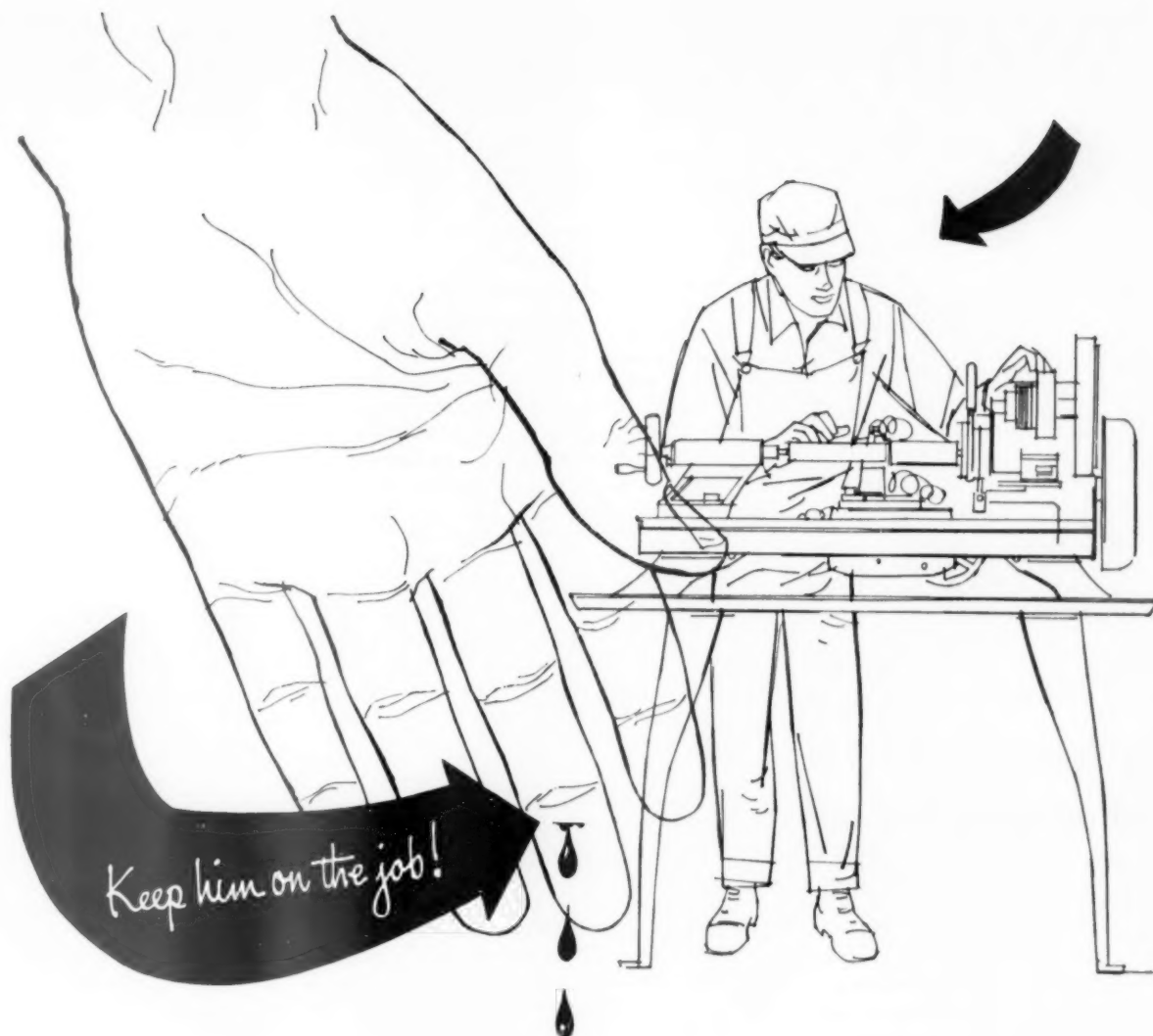
ACCIDENT AND FIRST AID REPORT FORM

Name _____	Date _____
Location _____	
Foreman _____	
Description of Injury _____	

First Aid Given _____	

Instructions Given _____	
By _____	
Cause of Accident:	
<input type="checkbox"/>	Unsafe Act _____
<input type="checkbox"/>	Unsafe Condition _____
<input type="checkbox"/>	Unsafe Practice _____
Medical Dept. _____ Claims Dept. _____ Safety Dept. _____ Production Dept. _____	

Figure 6. Simplified accident and first-aid report forms like the above will simplify record keeping while supplying adequate data.



Hexachlorophene in Formula #99 Antiseptic Soap cuts absenteeism by combating dermatitis and infections

Because of a tiny cut, this man may not work tomorrow! He'll wash his hands, bandage the cut, and hope everything will be all right. *Maybe* it will.

If you've supplied him with Formula #99 Antiseptic Soap in the washroom, Hexachlorophene—the only germicidal agent known that keeps its antiseptic power in soap—will reduce the chances of infection tremendously. Regular, daily washing with Formula #99 removes *up to 95%* of skin bacteria.

Ordinary washroom soaps don't have this antiseptic power. They leave skin bacteria that can aggravate any small cut, skin irritation or abrasion into a case of dermatitis. Armour developed Formula #99 Antiseptic Soap to combat this health problem—and to help overcome the tremendous loss of man-hours that results. Formula #99 is also *lanolated* to help replace natural skin oils.

Send the coupon today for further information and samples. See for yourself how Formula #99 can save man-hours by combating dermatitis.

CLIP AND MAIL THIS TODAY!

Please send me:

- ☐ "Antiseptic Soaps for Industrial Use"
☐ Formula #99 Liquid Antiseptic Soap Sample

Name..... Title.....

Firm.....

Address.....

City..... Zone..... State.....

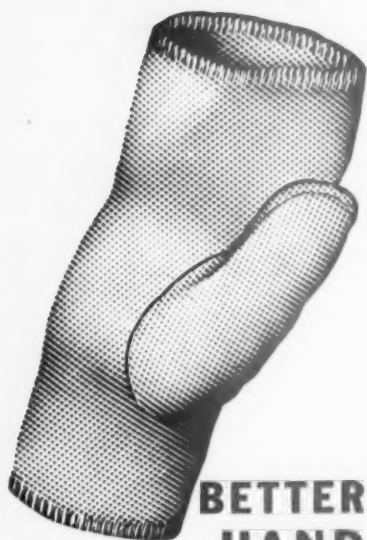
Formula #99 Antiseptic Soap is available through
your local Sanitary Supply Jobber

ARMOUR

Industrial Soap Department

Armour and Company • 1355 West 31st Street • Chicago 9, Illinois

"WOVEN-Gards"



BETTER HAND PROTECTION at amazing low cost

"Woven-Gards" are hand protectors, mitts, pads and sleeves made of a new long wearing safety material. They provide flexibility, comfort, resistance to abrasion and cutting far beyond that of anything used before. They are extremely oil-absorbent and do an excellent job when handling oily, slippery sheets. The porous weave makes them one of the finest protectors for handling lower temperatures. Enthusiastic users say they have never seen values like "Woven-Gards." Excellent protection at lowest cost. Send now for descriptive folder and prices.

INDUSTRIAL GLOVES COMPANY

A Corporation

1701 Garfield Street, Danville, Ill.

(In Canada: Safety Supply Co., Toronto)

To be sure
of the Genuine



Demand this
Trade Mark

severity because it develops an acute awareness of the necessity for personal protection against injury and a healthy respect for minor injuries.

Inspection and Control

16. On mobile equipment first-aid material can, in most cases, be handled in the same manner as small tools—charged, carried and maintained by the individual to whom they are issued. The safety or medical department should make regular inspections of the kits at least once a month and preferably every week. Replacements should be made whenever supplies have been used or when inspection shows replacements are necessary.

17. In permanent locations, the supervisor-foreman or work-crew chief is usually the person in charge of first-aid kits, with weekly or monthly inspections made by safety or medical department personnel. Replacement is made by the inspecting personnel or requisitioned through the stock room by the supervisor.

Pilferage

18. Much is made of the problem of pilferage of unit first-aid material. Pilferage is no more of a problem with unit first-aid material than it is with any other kind of first-aid supplies, small tools, stationary, pencils or carbon paper, or other items of value for off-the-job use. It can be controlled to a great extent by having one person responsible for dispensing supplies to the group whenever this is possible.

19. The small amount of pilferage which does take place probably pays for itself many times over by providing employees with first-aid supplies for off-the-job injuries, but such practices can and should be discouraged with proper indoctrination and first-aid training. Persons having access to first-aid kits should be impressed with the thought that unnecessary removal of materials from that kit and materials not promptly replaced might mean the difference between life and death to themselves or to their fellow workers.

Self-Medication

20. There has been considerable discussion as to whether first aid

is a factor in discouraging the reporting of so-called minor injuries for professional medical attention. If at all possible, of course, a professionally staffed first-aid room should be provided where the employees are grouped in one central location or work from a central location. Four hundred employees (or less if the work is hazardous) are sufficient to justify one or more full time professional medical attendants on each shift.

21. However, should the hours of the medical attendant differ from the working hours of the work force and no first-aid trained foreman or other trained person designated to be responsible for first aid is present, the workers themselves should be provided with training and materials to perform first aid. When first-aid training is given, the employees will be less likely to ignore the minor injury and will report for medical assistance because first aid teaches the dangers of neglect.

Record Keeping

22. Accurate records are necessary for the operation of any successful first-aid program. If proper inspection and control are maintained, record keeping can be simplified considerably and still be effective. When a foreman, supervisor or crew chief is in charge of the first-aid equipment, a report of each injury is helpful to the safety and medical departments in preventing the recurrence of the condition causing the accident. It is equally as important to have complete records to insure proper handling of compensation cases, for the protection of both the employee and the employer. Figure 6 is an example of a simplified record form. Copies should be made and distributed daily.

Special Purpose Kits

23. Certain industries and conditions within industries require special assortments which obviously could not be listed in the foregoing material. However, there are in use today over a hundred items manufactured and packaged under the unit system. One of the features of this system is the interchangeability of units to meet the individual needs of the field problem most often encountered.

WORK *in Safety...* WALK *in Comfort*

DORSEY SAFE-T-SHOES GIVE FULL PROTECTION

Protection against accident...Protection against fatigue!

Ruggedly built of select materials from the patented ARMORITE steel-flanged toe to the finest horsehide and cowhide uppers available, Dorsey Safe-T-Shoes are designed to furnish protection where protection counts most, plus solid comfort for long hours under the most severe working conditions. Compare Dorsey Safe-T-Shoes with them all and you, too, will say Dorsey gives greater protection . . . longer wear . . . more economy . . . plus all-day comfort on the roughest jobs.



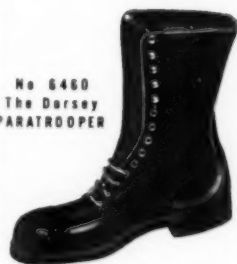
No. 4540

The Dorsey **CHAMPION**

Outstanding in every way, the Champion is made from triple tanned shell horsehide with full leather toe lining, Dacron stitching and steel arch. It offers the maximum in Safety and Comfort on any job.



No. 7200
The Dorsey
EXECUTIVE



No. 6460
The Dorsey
PARATROOPER

Dorsey dress Safe-T-Shoes give the same comfort and protection plus a style and quality comparable with expensive nationally advertised footwear . . . at half their price.



FREE INSPECTION!

Mr. Safety Engineer:
Clip and mail this coupon today!

DORSEY SAFE-T-SHOE Company
1226 Market Street
Chattanooga, Tennessee

Gentlemen: Please send me one pair of your No. _____ Size _____ for free inspection. If not completely satisfied I agree to return these shoes to you within ten days.

SIGNED _____

TITLE _____

COMPANY _____

ADDRESS _____



WHEELER PROTECTIVE APPAREL

Made from asbestos, flame-proofed duck and jean cloth, fiberglass, leather and wool.

The best grade basic materials, painstakingly designed . . . for safety with comfort, and long wear, earned the WHEELER reputation of "MORE SAFETY PER DOLLAR."

APRONS
ARM PROTECTORS
ASBESTOS FIREMEN
BLANKETS
CAPES
CAPS
COATS
CURTAINS
GLOVES
HAND PADS
HELMETS
HIP LEGGINGS
JUMPERS
LEGGINGS
MITTENS
OVERSHOES
PANTS
SLEEVES
SPATS

WRITE TODAY!

FOR OUR BEAUTIFUL NEW
CATALOG G98

WHEELER PROTECTIVE
APPAREL, INC.

226 W. Huron St., Chicago 10, Ill.



24. In addition, special purpose kits are available embodying these same principles for special field problems. There are burn spray kits for larger body burns of the kind which occasionally occur on steam-powered drilling rigs and certain pipe line operations in remote areas where more approved types of medical treatment are not possible. There are life raft kits for packing in pneumatic life rafts for over water air craft operations. Personal (packet type) kits are available for woodsmen, track walkers and survey crews. Snake-

bite kits are a necessity in most of the sparsely settled areas of the United States where there are four species of poisonous snakes.

Acknowledgement

This data sheet was written by Gordon P. St. Clair, Medical Supply Company. Mr. St. Clair is a member of the executive committee of the Wood Products Section. The data sheet was reviewed by the Safe Practices Conference Committee and approved for publication by the Industrial Conference of the Council. Dr. J. F. McCahan, Assistant Secretary, Council on Industrial Health, American Medical Association, has reviewed the final draft.

Cars Get a Free Bath



MANY COMPANIES have showers in employee washrooms; it's considered good industrial relations, as well as a health measure. Weyerhaeuser Timber Company has gone a step further; it installed a pair of free car-washers for the 2447 employees of its Longview, Wash., forest products plantsite.

Operating around the clock, the car-washers are automatically actuated when an auto is driven over the service-station-like alarm hose. Water is pushed out of nine nozzles at 125 pounds of pressure for a sequence of 45 seconds. A time relay shuts off the water automatically. Drivers remain in their cars during the washing period.

These quickie car-washers were built by the firm's millwright department when a plant electrician

had suggested it as a good way to get rid of industrial dust and soot which settles on employee automobiles.

Weyerhaeuser's Longview Lumber Division Manager, Harry E. Morgan, reports: "This new service has proved so popular that many employee families come to the plant on their days off to soap their cars for a complete job."

"Some of the other company branches in Washington and Oregon have shown interest in constructing car-washers, too. You have to be careful about one thing; one of our men forgot to close his car side vents before driving through—he also got a free shoe wash!"

Most car-washer traffic occurs at shift changes, and there is a wet trail leading to the main plant gate.

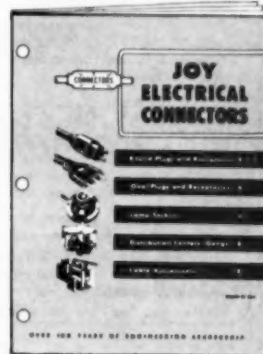


Safety is no accident

When JOY electrical connectors are on the job

In Industry . . . metallic dust, grime, moisture and careless handling are dangerous enemies of electrical connector performance. Constantly present around most installations they quickly try to increase resistance, crack insulation, fray wiring and corrode contacts, thereby shortening the life span and reducing the safety of electrical connectors. Fortunately, JOY plugs and receptacles are little affected by these conditions. Vulcanized to their cable as one-piece molded Neoprene units, they can't crack . . . won't lose shape . . . and require no special consideration to insure a long life of safe, efficient service. Hundreds of styles and sizes are now available for Industrial needs. So *for safety's sake* remember JOY when you next need electrical connectors . . . and in the meantime ask for your free copy of Bulletin MC108. It provides valuable additional information on Industry's favorite plugs and receptacles.

BULLETIN MC108



MORE THAN 100 YEARS ENGINEERING LEADERSHIP

JOY MANUFACTURING COMPANY

HENRY W. OLIVER BUILDING, PITTSBURGH 22, PENNSYLVANIA
IN CANADA: JOY MANUFACTURING COMPANY (CANADA) LTD. GAITHERSBURG, ONTARIO



FLAMEFOIL CANVAS*

...answers the "burning question"

-because It can't Blaze

Direct flame will only char
FLAMEFOIL treated fabrics
at the point of contact.

Fire cannot spread...not
even a continuing smoulder
to consume the rest of the
material after the source of
the flame is removed.

The patented FLAMEFOIL
process extends the life of
the fabric; neither soaking
nor exposure will remove
its protection against fire,
water, weather and mildew.

Tensile strength is preserved
and the canvas stays pliable.

Approved by the Underwriters'
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*Philadelphia Textile
Finishers, Inc.*

114 LAFAYETTE STREET
NORRISTOWN, PENNA.

Good Vision

—From page 31

We suggest that these two gen-
eral types be held in abeyance
until the third approach has been
successfully applied.

III. Consultation on Specific Problems.

As the most desirable of the
three approaches we recommend
that the optometrist offer his serv-
ices as a consultant to management
for the study of certain depart-
ments, occupations or processes
where accident hazards are known
to exist or where production or
some other function is lacking in
effectiveness. Here will be found
many opportunities to make posi-
tive contributions in a relatively
short time at a minimum of ex-
pense.

This might be called the rifle
method of approach. We take aim
at a clearly defined bull's eye on
an easily defined target. Success
in solving one or more such spe-
cific problems can in itself be a
profitable objective. Also, such
success could assist in selling a
larger, more difficult and costly
generalized program at a later
date.

The optometrist should not
always expect to find the complete
solution to a management prob-
lem entirely within the area of his
professional knowledge. We have
found some difficult management
problems, the very nature of which
placed their solution beyond the
realm of the optometrist. For ex-
ample, improved vision is ineffec-
tive against hazards causing
strains. These usually require im-
proved handling material methods.

Again, it often happens in
power press and circular saw
operations that the best of engi-
neering techniques can produce
only partial safeguarding. In such
instances, testing the vision of
operators may help, if combined
with improved housekeeping, in-
stallation of special floor mats,
better illumination, etc. A combi-
nation of such alternatives has
been responsible for improving
many situations which cannot be
completely solved by the technique
of any one specialist.

We have had, however, a num-

ber of experiences where improved
vision has solved or substantially
controlled management problems.
Here are a few:

A group of restaurant waitresses
was reporting a high frequency of
injuries resulting from falls, burns,
bumps and bruises for which there
appeared to be no engineering
solution. Tests revealed many
cases of defective vision. After
correction, accident frequency
dropped about 50 per cent.

One of the most sensational
examples of how better vision can
solve a major industrial problem
involves the plant watchman. His
ability to do his work well depends
largely upon his ability to observe
conditions as he makes his rounds.
If his vision can be improved by
even five per cent that narrow
margin might mean the difference
between knowing whether an ele-
vator car was or was not resting
at his floor level as he opens the
gate and prepares to step into the
shaftway.

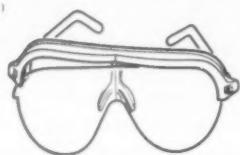
We have found department store
salespeople reporting a large num-
ber of minor falls, bumps and
bruises that seemed to have no
engineering remedy. Evaluation
and correction of vision has in-
variably reduced the number of
injuries.

Another example was at a sugar
warehouse. Automatic handling
equipment had eliminated many
manual hazards yet many people
were being injured through falls.
Investigation showed that the in-
stallation of automatic handling
devices had also required the con-
struction of new ladders, catwalks,
and overhead runways from which
employees were falling. Tests in-
dicated a high incidence of vision
defects which were resulting in
miscalculated foot work. After
correction, accident frequency de-
clined.

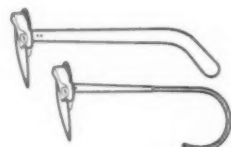
A crane operator needs particu-
larly accurate vision to lift, move
and place heavy loads accurately.
Serious accidents have occurred
when new operators were em-
ployed without vision testing, espe-
cially for depth perception, or
when experienced operators began
to suffer deterioration of vision
through age.

There are some locations where
illumination cannot be improved

1¼ oz. BAL-spec Eye Shield



One-piece snap-in lens is extra large, affords wide field of vision, is formed to 6.00D curve. All-acetate frame is non-sparking.



Ful-Vue temples provide unrestricted side vision, choice of flexible riding bow, or spatula which are especially liked by women because they don't muss hairdo.



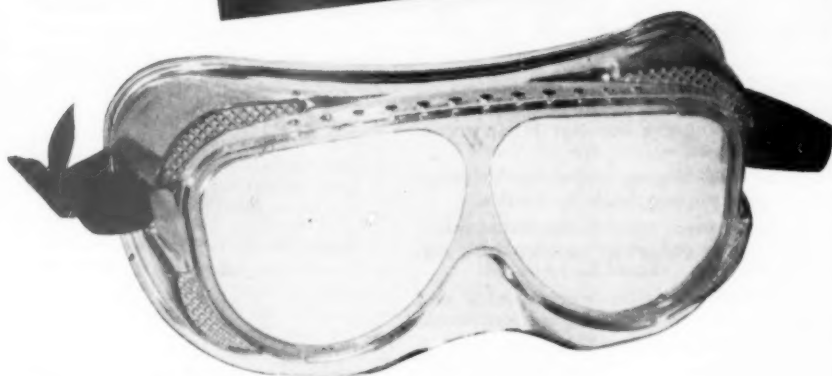
1 BAL-spec All-Acetate Eye Shield

BAL-spec is especially suitable for supervisory personnel and plant visitors, and others who pass in and out of hazardous areas. Each BAL-spec Eye Shield is individually sealed in cellophane, may be repacked and sealed for re-use in polyethylene bags available from Bausch & Lomb. BAL-spec meets all U.S. Bureau of Standards tests for impact-resistance, of course.

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to low cost eye protection



BAUSCH & LOMB CENTENNIAL



2 BAL-guard All-Acetate Eye Shield

Here is side and frontal protection without restriction to field of vision. BAL-guard is molded to fit any average face comfortably. It may be worn over regular glasses, or corrective safety glasses. BAL-guard meets all U.S. Bureau of Standards requirements for protection against impact, guards against dust or splash. Frame available in 2 shapes—wide and narrow—in clear, transparent green or opaque brown. Snap-in lens in clear or transparent green.

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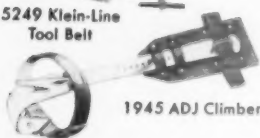
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materially. Those required to work in such areas or to pass through them, such as operators of hand or power trucks, should be tested with specific reference to ability to see under poor light or to recover from glare.

From these examples comes the confirmation that improved vision is an answer to some industrial problems. Sometimes, it is only a partial answer, but nevertheless a useful aid.

Recommendations

The following suggestions are offered the optometric profession in achieving cooperative, successful relations with management:

1. Do not restrict your interests to accident prevention. Extend them to all functions of management.

2. Your approach to management must be realistic, based on a sound working knowledge of processes and production methods. Few of the answers will be found in professional textbooks.

3. The profession might consider as a useful research project the packaging of an extension course in industrial management, including accident prevention, which would be available for study by those interested in occupational vision. The text for such a course would be relatively easy to produce. Coupled with plant visits it should provide a practical background for approaching industrial problems.

4. Management can gain many advantages in adopting an occupational vision program. A man cannot work any better than he can see.

5. We have outlined three possible approaches to the industrial executive. Two involve suggestions for generalized vision programs. The third, which we consider the most practicable, is offering your services as consultants.

6. The optometrist should not expect to find the solution for all industrial problems with the area of his professional skill. We have presented examples of problems where improved vision was and was not the answer.

7. Finally, there are many suggestions not primarily in the field of optometry which can improve directly or indirectly certain phases of occupational vision. These originate with other industrial specialists and include: improved housekeeping, relocation of machines, shape of materials used, effectiveness of tools and equipment, adequate lighting, improved contrast, etc.

Plenty of people have a good aim in life, but a lot of them don't know where or when to pull the trigger.

Pamphlet on Burns Now Available

Reprints of *What You Should Know About Burns*, a pamphlet devoted to burn therapy, by J. D. Ratcliff, well known science writer, are now available.

They may be obtained upon request by writing Miss Dunbar, Special Science Feature Service, 2 West 45th St., Suite 1201, New York 19.

Problem Children

—From page 33

ening suit for permanent damage to the leg. The residual damage was an inconsequential half-dollar size area of impaired sensation. We also learned there were several other off-the-plant automobile accidents.

All these incidents, when taken individually at the time of their occurrence, were apparently legitimate; chance occurrences, yet raise the question why should they all happen to the same individual. Direct costs to the company for this man's sickness and injury amount to \$3000 and, although it is impossible to figure, it could be estimated that he has cost the company ten times as much in property damage and loss of productivity.

The man gives the impression of being a pleasant, affable, overly conscientious individual who expresses only love and kindness toward his fellow man (whose life he repeatedly endangers by his methods of working and driving) and the greatest loyalty to the company (whose interests he destroys by working unprofitably). On the surface he presents the picture, of what has been praised, as the ideal human being and employee.

Because of this superficial appearance of goodness and docility, his obviously poor performance was always excused and neither society nor his boss required him to meet his responsibilities for living and working safely and productively, going through the motions of conscientiously bustling about and saying "yes, sir" at the right time was accepted instead of correct performance. Recognized unsafe practices were



... THEN WE INSTALLED ALGRIP And Ended Slipping Accidents And High Insurance Costs!



It happened at a large industrial plant, where oil and grease on a loading platform created a constant hazard. A lift truck skidded on the slippery surface, toppled from the platform's edge, and crushed the operator to death.

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IMMEDIATE SAVINGS were obtained in three ways: (1) *No more costly, morale shattering accidents.* (2) *Faster handling of loads.* (3) *Workmen's compensation insurance premiums were substantially reduced by more than enough to pay for the ALGRIP installation.*

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EMPLOYERS MUTUAL FIRE INSURANCE COMPANY

condoned. We did this man no favor by excusing them. We were at fault, we of supervision, of management, of society, for not recognizing this man's failure to meet reality and making him correct his behavior ten years before. We excused his poor performance and failed to do our duty both to him and to others.

The employee does not enjoy being treated in this irrational fashion. Employees have justifiably complained bitterly when, after ten years of tolerance, their performance finally became so bad that discharge was threatened. As one employee put it tearfully, "Why didn't somebody kick me in the pants ten years ago and make me get on the ball? All they did was give me another chance, and give me another chance, and now they want to fire me."

Several years ago an engineer on a large railroad disregarded the signals and pulled his train on the main line. Many deaths occurred in the resulting wreck. One newspaper report stated that this engineer had had approximately 20 warnings and 17 penalties for repeated infractions of the rules. It was inevitable that something like this would happen.

Obviously, warnings and penalties did not serve their purpose when used as gimmicks to take the burden off supervision for seeing to it that the man drove his train safely. Rarely, it may be necessary to eliminate an unsafe employee in the same way as it may be necessary to lock up a dangerous psychiatric patient, to protect society from a man and a man from himself. Only one man in five years' experience was so eliminated.

Medical experiments have shown that a perfectly healthy individual put at bed rest for several weeks will begin to deteriorate physically. On the other hand exercise and work increase strength and stamina. The same principles apply to mental health and disease.² There is a common impression that mental disease is incurable and hopeless. This is untrue. The most disabling mental sickness is found in those who have succeeded best in evading

their responsibilities. The patient in the padded cell assumes no responsibilities whatsoever.

Studies also indicate that those individuals who do a good job, both on and off the plant, are rarely sick, rarely in trouble and rarely get hurt. The corollary is then, that getting people to do a good job should cut down on sickness and injury. It has been quite apparent that the employees who follow the safety rules, who obey the rules of society, who meet directly their own problems are mentally healthy and live satisfying productive lives.

Direct psychiatric work with individuals is only a minor aspect of curing this mental illness. Physicians have no authority in line supervision. Supervision has the responsibility to see to it that all employees work productively and safely. If supervision evades this, they, too, become mentally ill, and promote even more illness in their subordinates. When a high proportion of emotionally sick employees are tolerated in any group, there develops a morale problem of which a poor safety record may be only part of the evidence. Some practitioners of the psychological arts have taught that supervision should try to understand the mental life of their subordinates. In the author's opinion, based on practical plant experience, it is unnecessary for a good supervisor to practice psychiatry. It has been found that attempts to read the subordinate's mind or probe his motives is usually futile and sometimes harmful.

The du Pont safety record demonstrates that good performance can be obtained by good management and supervision without mind reading.

Data is available from experiments carried on without the knowledge of the author which demonstrates that these principles work in practical plant experience.

A Shops group of 300 craftsmen had maintained a very poor safety record for many years. Following a fatality in 1947, the chief supervisor was called in by management. He was informed that henceforth he was to be held strictly responsible for the performance of his group. He was

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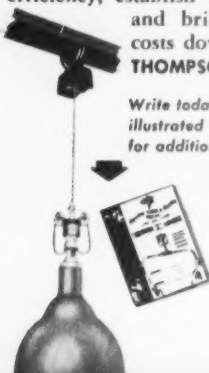
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penalized for his past failure. This was particularly galling since he was off the plant ill at the time of the fatality. His immediate reaction was intense resentment. He believed he had been treated unjustly and felt humiliated and so bitter he even considered quitting the company. His anger continued for days but as he later admitted during this time he did some of the best thinking in his life. This led him to the conclusion that he could do something to prevent his men from killing and maiming themselves.

He set about seeing that safety rules were enforced rigidly, that other forms of evasion of responsibility were stopped by everyone in his group. There has been four years of subsequent exposure without a single time-losing injury and a steady decrease in less serious injuries.

A similar experiment was performed in a group of 1,000 heavy maintenance and construction men. This area had maintained the worst safety record in the entire company for many years. Each year when they had reviewed their performance, they shook their heads sadly and, although recognizing it was bad and that they took care of their men to the degree that they did everything but think for them, they would continue on with the same safety program and hope the "bad luck" would stop. Talking about safety by itself will not stop injuries any more than penalties stopped the engineer from driving his train recklessly.

By 1948 the "bad luck" had not stopped; if anything, it had grown worse. Management again stepped in and demanded that the superintendent himself accept the responsibility for seeing that the men worked safely and productively. All the supervisors were called in for personal interviews. It was pointed out that they had tolerated unsafe acts and other infractions of the rules and had let the men run them. They were told their performance was unsatisfactory and had a false sense of job security. If they believed they were incapable of stopping the men from hurting themselves, they had better quit now.

No change in type of work, personnel, or safety procedure was made. This same group created what is probably a world's record in safety performance for about 3 years.

This record was recently broken by an individual who was injured, by what appeared on the surface, to be a chance occurrence. Yet, this employee had one serious injury in the past, had been seen by the psychiatrist for an emotional illness and had been an uncorrected problem to his supervision for a long time.

References

1. Tillmann, W. A., and Hobbs, G. E.: The Accident Prone Automobile Driver, *Amer. J. of Psychiatry* 5:106, 1949.
2. Personal communication—F. W. Dershimer, M.D. E. I. du Pont de Nemours & Company.

Safety Solvents

—From page 29

flash and fire point values provide a complete picture of the flammability of "safety solvents," especially where such solvents are composed of several ingredients. Some of the ingredients may evaporate faster than others, thus causing a change in both flash point and composition of the remaining liquid.

Moreover, certain non-flammable solvents have a tendency to mask the flash point of flammable materials. Flash point determinations on such mixtures are subject to great error and in many cases no true value can be obtained.

In evaluating fire hazard, therefore, other data should be used to supplement flash point and fire point information.

Auto ignition point is the temperature at which solvent vapor and air mixtures will ignite without the aid of a spark or flame. This represents a tendency towards spontaneous combustion. Explosive range, or flammable limits, represents the range of concentration of solvent vapor in air required in order to propagate a flame or to explode under confined conditions. Vapor density and latent heat of vaporization are also significant to the safety engineer.

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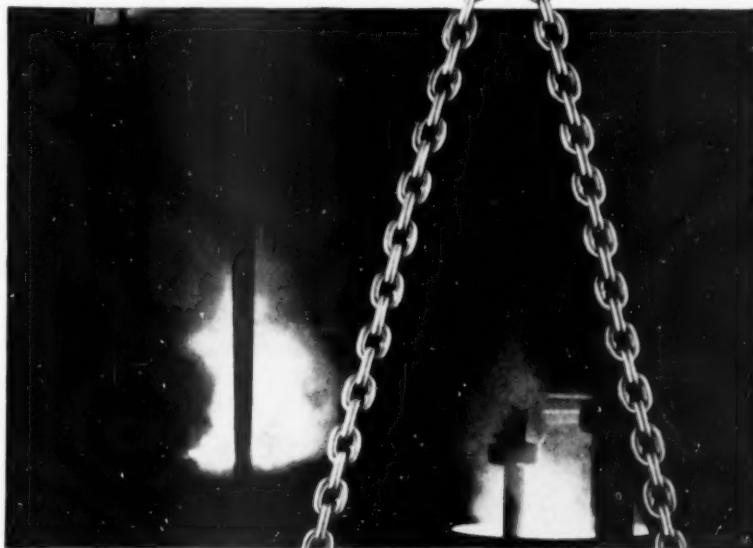
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classification of hazardous liquids uses a numerical scale of hazard ranging from 0 to 100. (3) Solvents are rated numerically by comparing their hazard with one of the familiar materials listed.

General Classification Numerical Scale

Ether Class	100-110
Gasoline Class	90-100
Alcohol (ethyl)	60- 70
Kerosene	30- 40
Paraffin Oil	10- 20

Toxicity

Health authorities are pretty much in agreement that all chlorinated solvents are poisonous to some extent. Exposure to atmosphere in which the odor of chlorohydrocarbons is detectable constitutes a potential health hazard.

Carbon tetrachloride is noteworthy for the type and extremity of damage which it causes internally. It has definitely been established that this solvent can seriously damage the liver, kidney, heart, adrenal glands and nervous system. During the past year there have been more than 12 reported deaths in New York City alone due to absorption by the body of carbon tetrachloride.

The toxicity of carbon tetrachloride is known to be especially hazardous to persons who are overweight, or chronic alcoholics. The symptoms of over-exposure are often headache, confusion, depression, fatigue, loss of appetite, nausea and dizziness. Unfortunately, many of these symptoms do not appear until some time after exposure—after damage has already been done internally.

The toxicity hazard of solvents usually involves two problems:

1. Vapor toxicity, which concerns itself with contamination of the air by the poisonous fumes of the solvent.
2. Skin contact toxicity, which concerns itself with the poisonous effect of direct contact of the body with the liquid itself.

In considering vapor toxicity, the speed with which the solvent evaporates is an important factor. We have noted in discussing flammability that a solvent which evaporates rapidly often has a low flashpoint, and hence is likely to be hazardous. It is also true that when a solvent evaporates rapidly in a confined area, there is likely to be a high or hazardous concentration of fumes in the air.

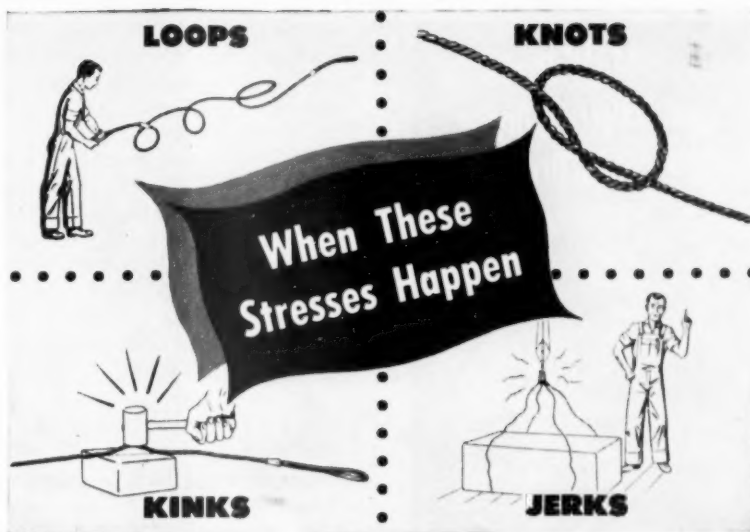
Thus we see that the actual vapor toxicity of the solvent is determined not only by the inherent toxicity of the chemical itself, but also by its tendency to contaminate the air we breathe. This measure of the tendency of a liquid to evaporate, or to change from a liquid to a vapor, is usually expressed as vapor pressure. A rapidly evaporating solvent would have a higher vapor pressure than one which evaporates slowly.

For any material which tends to give off noxious fumes, there is a maximum allowable concentration (M.A.C.) which can be tolerated by the human body without damage. The M.A.C. is usually expressed in parts of vapor per million parts of air. It is taken as an index of toxicity, and is defined as "The upper limit of concentration of a contaminant in the air which will not cause injury to an individual exposed continuously during the working day and for indefinite periods of time." (1)

For evaluation of vapor hazard, then, M.A.C., as well as vapor pressure, are important considerations. Since these figures are not available in the literature for mixtures of solvents, it is usually necessary to run toxicity tests in order to determine the degree of hazard. Laboratories are available to industry that specialize in determining the toxicity of new products.

In their tests, white rats or rabbits may be exposed to atmospheres containing specific concentrations of the solvent being tested. The ability of the animals to withstand exposure to these atmospheres with no harmful effect is then determined. By comparing the effects of these solvents with those of more familiar materials like kerosene, alcohol, and carbon tetrachloride itself, some preliminary estimate of hazard can be made.

Skin contact toxicity is also determined preliminarily through the use of patch tests on animals. If the results indicate reasonable non-toxicity, these tests are repeated on human subjects. Skin contact toxicity determination should include both the effect of the solvent on the area of contact, as



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well as on the internal organs due to absorption of the solvent. Since many of these toxic effects do not show up immediately, tests must be continued for a minimum of 90 days to obtain conclusive results.

The possibility of sensitization should not be overlooked. Many individuals are sensitive to certain chemicals, and an initial contact with this chemical increases their sensitivity so that subsequent toxic effects are greater.

All commonly used solvents have a defatting action on the skin. The removal of the natural oils causes dryness which, in extreme cases, may lead to cracking of the skin and possible infection. Prolonged contact of the skin with any solvent should be avoided.

Producing a Safety Solvent.

The raw materials that go into these replacement solvents are no secret to the experienced manufacturer. Most of the products now being marketed as replacement for carbon tetrachloride are blends of several solvents, each included for its own particular properties. By judicious blending, one is able to produce solvents with the maximum of desired properties.

Usually it is necessary to sacrifice one safety feature in order to obtain another. With thorough knowledge of the application for which the solvent is desired, intelligent choices can be made. Table I indicates a few of the properties of some commercially available solvents. The values presented for M.A.C. vary depending on the source of this data. A discussion of the raw materials is in order at this point.

1. Aromatic solvents, such as benzene, toluene, xylene and so called solvent naphtha, are available both from coal tar and petroleum sources. These products have excellent solvent power; evaporation rate varies from rapid to slow but they are both toxic and flammable.

2. Chlorinated solvents, belonging to the family of halogenated chemicals, are commonly used. These also have excellent solvency, with evaporation rates ranging from fast to slow. The toxicity of these solvents is generally rather high. This class includes such chemicals as methylene chloride, carbon tetrachloride, trichloroethylene, perchloroethylene, ethylene dichloride, chloroform, trichlorethane. Not all chlorinated solvents are non-flammable.

Such chemicals as ethylene dichloride and orthodichlorobenzene will burn readily.

3. The so called active solvents are used primarily in the lacquer and paint fields. The ketones, esters, and alcohols which belong to this class usually possess high flammability and strong odor and are not commonly used for general purpose cleaning.

4. The solvents used in greatest gallonage are those derived from petroleum sources. We refer here to the so-called aliphatic hydrocarbons. In this class are such materials as gasoline, V M & P naphtha, Stoddard Solvent and kerosene. In general, these materials have a relatively low order of toxicity. Evaporation rate and flammability vary from low to high. Those which evaporate fastest also have the highest flammability hazard. Their solvent power is not considered good, although they are excellent cleaners for lubricating oils and greases.

Depending on the ultimate properties desired, various percentages of the chemicals mentioned above may be blended together until a product is produced having the desired compromise in flammability, toxicity, evaporation rate, and solvency.

Since very little is published concerning the properties of the infinite number of blends that can be made with these solvents, the reputable manufacturer must have available to him completely equipped laboratories — not only for the purpose of testing his experimental blends, but also for the purpose of maintaining the quality of his finished product. For exacting quality control, every shipment of raw material also must be tested.

Dielectric constant, acidity, corrosive properties, distillation range, freezing point, evaporation rate, solubility and viscosity are only a few of the characteristics which must be controlled in applying these solvents to specialized industrial uses.

Precautionary Measures

We have cited earlier the responsibility of the manufacturer of so-called "safety solvents." Even if he produces the safest solvent possible for the application required and provides all the necessary data for safe use of his product, it is of no avail unless the user himself observes the required precautions.

The most effective measure is a sound educational program for

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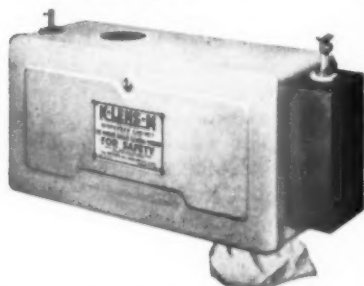


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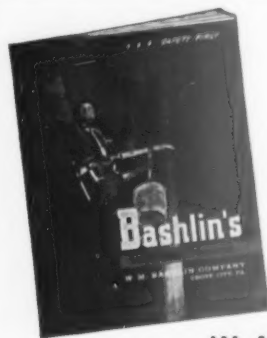
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personnel. No amount of mechanical installation can substitute. Employees and users of these materials should be aware of every possibility of hazard through their use. Nor is any educational program complete unless it also includes careful periodic checking by supervisors to see that precautionary measures are carried out.

Contact of the skin with solvents should be minimized through the use of rubber gloves, protective aprons or clothing, and goggles. Contact of the vapors or liquid with the eyes should be particularly avoided because of the sensitiveness of these organs. Individuals who have been subjected to the defatting action of a solvent should have available supplies of lanolin-containing creams, and should make frequent use of them in order to restore the oils to the skin.

Persons who show symptoms of over-exposure to toxic vapors should immediately be removed to fresh air. Initial symptoms of over-exposure to excessive concentration of solvents often include headache, undue fatigue or nausea. If the condition does not disappear quickly, a physician should be summoned.

Adequate ventilating equipment, including blowers and exhaust hoods, is probably the most important mechanical means for minimizing both fire and toxicity hazard. The use of solvents should be confined to those areas which can be provided with suitable ventilation. Installation of such equipment must be engineered so as to keep the air well below the maximum concentration of the solvent vapor concerned.

Where toxic solvents are used in quantity, thought should be given to the installation of automatic vapor analyzers which can maintain a continuous control over the vapors present in working areas. These instruments are available through safety equipment manufacturers.

Inflammable solvents should never be handled in areas where there is possibility of contact with open flame or sparks. It is estimated that open flames have caused 23 per cent of fires in industry. (2) Approximately 16 per cent have been traced to the faulty

installation of electrical equipment in areas where inflammable liquids are handled. Particular caution should be exerted when the solvent is sprayed into the atmosphere, even if it has a high flash point. Contact with flame or sparks will cause immediate combustion of the sprayed droplets.

Unless the "safety solvents" used are completely non-flammable, industries should give proper attention to suitable fire extinguishers and protective devices. Information concerning the type and number of such devices required can be obtained from the manufacturer of the solvent and insurance companies. Foam, carbon dioxide and dry chemical extinguishing agents are suitable for most safety solvents.

References

1. Ind. Eng. Chem. (News Ed.) 19,742 (1943)
2. Factory Mutual Bulletin No. 13,20
3. Underwriters Laboratories Bulletin No. 29

See also: Handbook of Dangerous Materials—N. I. Sax, Reinhold 1951.
Industrial Solvents—I. Mellan, Reinhold 1950.

National Fire Codes—National Fire Protection Assn.

Noxious Gases—Henderson and Haggard, Reinhold 1943.

Properties of Flammable Liquids Gases & Solids—Factory Mutual Bulletin No. 36,10.

Good Medicine

—From page 21

ing our plants and plant equipment for safety. Our safety policy reads:

"It is the policy of the Company to conduct all its operations in the safest manner possible in order that injuries to persons and damage to property and equipment shall be held to an absolute minimum. As is the case with every company engaged in manufacturing operations, Alcoa's primary objective is production; however, it is essential that such production be carried on with safety. Safety is an integral part of production and is not to be considered as an entity separate and apart from production."

You can see the tie-in of this policy and safety engineering. It is impossible to state the exact



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Completely New Type of Helmet. The one-piece helmet shell is high-compression molded of laminated fabric, phenolic impregnated. This thermo-setting material, by being more resistant to high heat and much less moisture absorbent, will hold its shape and weight far better than the ordinary vulcanized fibre. Its tough surface withstands weld spatter. It has been tested at 3000 volts against electrical conductivity. It is strong, smooth, easy to clean, and far more attractive in appearance.

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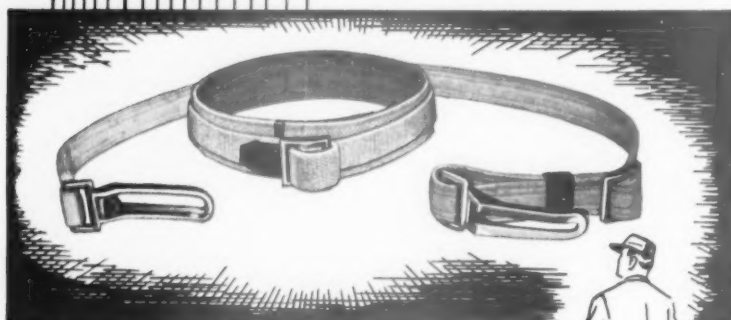
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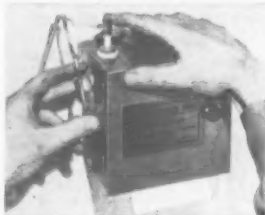


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amount of money we spend annually for safety engineering, but we are convinced by our experience over the years that expenditures which we make for safety engineering have been, and I am sure will continue to be, wise investments that pay good returns in fewer accidents.

The third phase of our safety E program, enforcement, is used only where the first two E's have failed. Every attempt is made, however, to enforce rules fairly and reasonably. It is not a simple matter to handle this phase of a safety program and every effort should be put forth to make certain that it is done as well as possible.

A complete safety program must certainly begin by top management being thoroughly and completely sold on the need for a good and effective program and being willing to invest the necessary money, time and intelligence to make the program a successful one. To accomplish this, management should adopt the following four basic principles:

1. Really believe in the importance of industrial safety.
2. Understand that an industrial safety program will have to satisfy pressures from government, customers, employees, stockholders, and the general public.
3. Recognize its responsibility for the development of spirit and attitude at all levels of the organization.
4. Practice what it preaches by providing funds for adequate safety personnel, safety training procedures, and safety equipment.

Safety is recognized as being a state of mind. There is no doubt that the biggest part of the job in safety work is the forming of proper attitudes and habits among employees. There has to be a persistent effort on the part of all company supervision in the direction of safety. A compromising attitude towards safety on the part of any of our management personnel can have very damaging effects on the attitude of workers. For instance, we may have a first-line foreman in a department who is sincere and safety-conscious, but if his department foreman or general foreman is only lukewarm, this can be very detrimental to the attitude of the first line foreman.

Top management safety policy

must not be distorted by the time it reaches the first line level of supervision if a good safety program is to be in effect. If you should make a survey of your employees and ask their opinions about the efficiency of your safety program, their answers would probably be determined by the attitude of the supervisor for whom they work.

In addition to the direct returns of a good safety program, there are many intangible benefits to be derived which undoubtedly exceed the former. I would like to discuss some of these intangible benefits and tell you about a few ideas which we have found helpful in our safety program. To do this, I would like to quote two paragraphs from an article which appeared in the *St. Louis Business Record* of March 14, 1950, entitled, "Safety—Its Effect On Employee And Public Relations."

It is surprising how employees react when a company demonstrates that it is genuinely interested in safety. There are two ways to conduct a safety program, however—one is with lip service only and the other is with genuine and sincere participation. Freedom from harm has been a basic psychological desire of man since the beginning of time. Since freedom from harm is so directly dependent upon safety in the plant, its ramifications should be studied more thoroughly.

To the employee, freedom from harm means more than absence of injury to himself; it means security and happiness for his family. It naturally follows that if he is hurt on the job the results will directly affect his family through decreased earnings which in turn affects everyone in the community with whom he deals; the grocer, druggist, filling station operator, and every other shopkeeper with whom he does business. Therefore, it can readily be seen that safety has a direct bearing upon community relations.

We have a sign in our Medical Department waiting room for new employees which reads: "Safety is Everybody's Business," and we do our utmost to encourage all employees to believe in this sign and to participate in our safety program. We believe our new employees become immediately aware of their responsibility to safety while they are waiting for their pre-employment physical examinations because of the impressiveness of this sign.

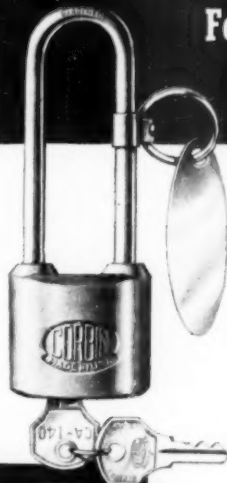
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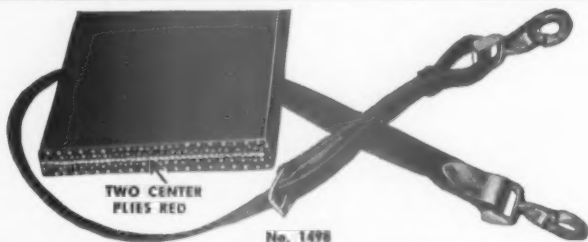
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the usual type of safety committee plan. We do have an executive safety committee which decides on all major safety administrative functions subject to final approval by the works manager. We try to sell the idea that every employee is his own committee of one for dealing with his foreman on safety matters. We also have placed full responsibility for all safety matters directly on our foreman, but we tell him that he can and should solicit all the help he may need from the Safety Department.

The use of billboard advertising methods, posters, bulletins, etc., are all excellent safety media, and we use many of these. We also use safety slogans on our clock cards and pay checks. These things cost money and the results obtained from their use are more or less intangible, but we feel that they are worthwhile expenditures.

One of the best methods which we have found for building safety morale is to have our supervisors give prompt attention to safety suggestions. Sometimes the suggestions themselves are not too relevant or important, but the fact that interest is shown by management in the employees' welfare does much to build a very good attitude towards our general safety program.

I am not trying to imply that we in Alcoa believe we have perfect programs; we know we do not. In spite of all our efforts, we do have accidents, and sometimes when we seem to be working the hardest on safety programs, we will be confronted with a rush of accidental injuries; but we can't afford to ever lose sight of the goal which we are always shooting for, that is, the operation of our plant without accidental injuries, so we believe that our safety programs must be a continuing one and we hope an improving one.

For some strange reason, it seems to be necessary to create a desire among employees to work safely. The average individual is a gambler at heart and chance-taking is just another form of gambling. You may recall the statement made by James Carroll of St. Louis, when he was testifying before the Kefauver Crime Investigating Committee, that he considered gambling a biological

necessity. We do not believe that gambling which might result in any kind of bodily injury is a necessity—biological or otherwise.

A good safety record does seem to create more of a desire among employees to work safely. They all like to feel they are on the team, and if a good safety record is going, they hate to be the one to break it. Publicizing a safety record does seem to create a greater desire to work safely and make employees more safety-conscious.

We also have found that compliance with safety rules and regulations tends to cause employees to accept other company rules and policies more readily. Last year we had an increase in our disabling injuries and a careful analysis showed that the majority of these accidents were caused by failure of the injured employee to follow safety rules. At our Works we have many operations where there is exposure to strong caustic and many of our injuries were caused by failure of employees to wear goggles to protect their eyes

on the job. Wearing of safety goggles on these caustic operations was specifically required by our plant safety rules, but the rules were being ignored.

All the facts concerning these accidents were placed before our management personnel and the union committees. It was decided, after a 15-day period of re-education on safety rules, especially on the goggle-wearing rule, that fu-

ture violations would lead to disciplinary action.

Since we took this position—almost a year ago—we have not had a disabling injury caused by a violation of safety rules and we have not been compelled to use disciplinary action on a single case. I am not implying that we have not had some rule violations, but we do know these violations have been considerably reduced,

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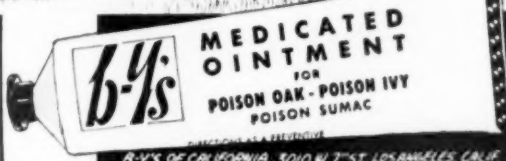
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and we have all resold ourselves on the importance of that third E—Enforcement.

If safety rules are fair and practical there is no reason why management should not expect 100 per cent compliance. Employees generally have a high regard for management that has a firm policy towards safety. However, the whole job cannot be done by compulsion. It is necessary to provide the best possible safety devices

and safety engineering, as well as a good, continuous, educational program.

Many of us are fathers and have had some experience in rearing a family. We try to see that our children have the proper food to develop them physically. We try to send them to the best schools we can afford so they can be properly trained and equipped for future life. Likewise, we are spending more in industry for

education and training, whether it be in safety or some other field, and we are trying to produce better employees who will be better equipped to do better jobs for us. "On the job" training in safety cannot help but influence an employee's "off the job" safety habits. If employees are hurt off the job or on the job we lose valuable personnel who have cost us considerable time and money to train.

We also believe in cooperating in every way possible with community safety programs. Results from money spent in this manner are often intangible, but it matters not whether an injury to one of our employees occurs on or off the job—either way we lose his service. Off-the-job accidents to members of our employees' families also sometimes directly affect their attendance and production records, so investment in community safety programs is worthwhile.

So to summarize, it seems that a good and adequate safety program can be accomplished by wisely spending money, time, and effort on these activities because such expenditures pay fine dividends. Most major companies are convinced that this is so, as evidenced by the large annual expenditures which they make for safety.

Unless industry, and particularly small, local industry, makes progress on the prevention of accidental injuries, we are apt to be faced with compulsory state and federal safety legislation which could be much more costly to industry than the additional expenditures that might be made at this time to improve inadequate safety programs. Industrial accidents not only have an adverse effect on a company's public relations in each community, but they also affect the economy of a community.

Therefore, we must conclude that improved safety programs which can be developed by top management's complete endorsement and which incorporate good educational, engineering and enforcement sections can really breed dollar bills for the companies who make these investments of their money, time and intelligence.

Are You Fully Protecting the Feet of Your Employees?



"SANKEY" IMPROVED FOOT GUARD equipped with Anti Skid TOE CLIP.

"SANKEY" FOOT GUARDS consist essentially of a metal shield to be worn over the shoe whenever the foot is in danger of being either crushed or cut. The metal shield is designed to furnish a maximum amount of protection to the entire front of the foot—not merely the toes alone, but also to the instep against hazards from falling, rolling or flying objects, or from accidental tool blows. Write for literature or a trial pair.

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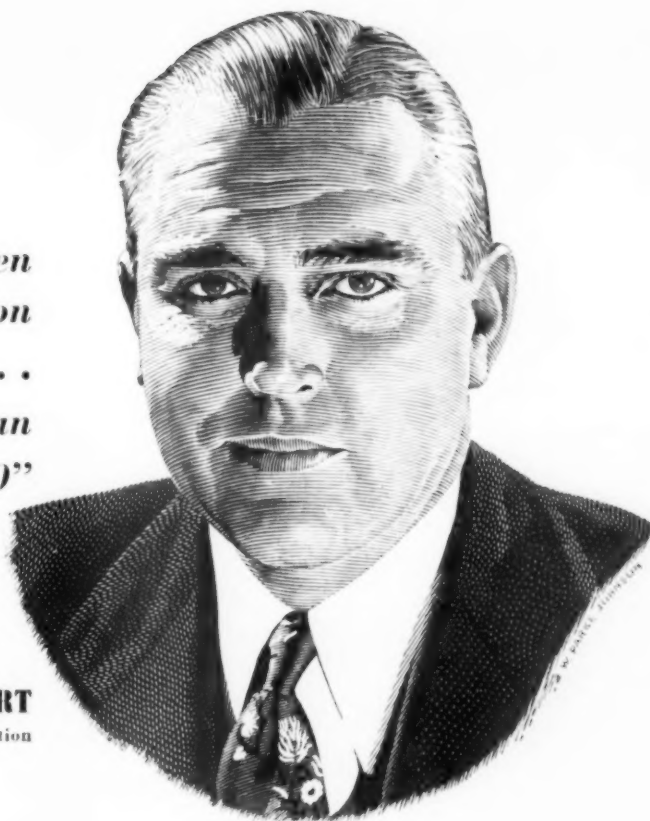


Foot Guard Equipped
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Savings Bonds . . .
worth at maturity more than
\$236,444,000"*



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President, Chrysler Corporation

"A planned program of thrift is essential to personal, material security. The regular purchase of U. S. Savings Bonds can be a sound part of any savings program, along with investment in a home and proper insurance protection. Chrysler Corporation employees support the Payroll Savings Plan for the purchase of U. S. Savings Bonds. They have bought more than seven and a quarter million of the bonds, worth at maturity more than \$236,444,000. Such systematic thrift not only benefits them, but strengthens the economy of their country."

Largely as a result of consistent thrift by Payroll Savers, Americans today hold a cash value of more than \$49 billion in Defense Bonds. This figure is \$7.5 billion greater than at the end of the war.

Every month, 7,500,000 employees of more than 13,000 companies buy \$150 million more in Defense Bonds.

Think of the reservoir of future purchasing power represented in the more than \$49 billion that men and women have put aside for the proverbial rainy day.

Consider still another benefit to industry. The Payroll Saver is a serious worker. Records of many companies prove that lost-time accidents decrease, absenteeism is reduced and production improves as enrollment in the Payroll Plan goes up.

If your company does not have the Payroll Savings

Plan . . . or if you have the Plan and employee participation is less than 50% . . . call the attention of your President or Chief Executive to

Two Easy Steps to a Successful Payroll Savings Plan

1. Phone, wire or write to Savings Bond Division, U. S. Treasury Department, Suite 700, Washington Building, Washington, D. C.
2. Your State Director, Savings Bond Division, will tell you how to conduct a simple, person-to-person canvass that will put a Payroll Application Blank in the hands of every employee.

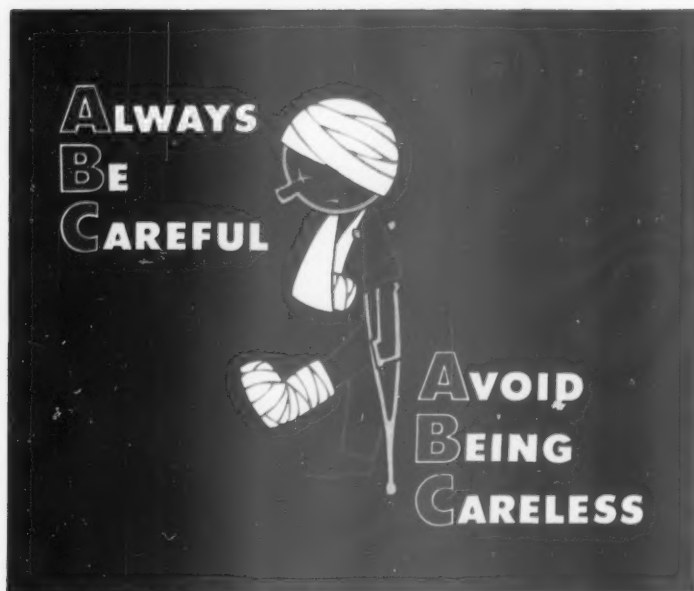
That is all management has to do. Your employees will do the rest. They, like thousands of Chrysler employees, want to provide for their personal security.

The U. S. Government does not pay for this advertising. The Treasury Department thanks, for their patriotic donation, the Advertising Council and

NATIONAL SAFETY COUNCIL



For a Successful Poster Program



JUMBO POSTER FOR MARCH 1953

The Jumbo poster, issued monthly, is designed for outdoor use and is available to members on annual subscription but is not stocked. Its actual size is 9' 11" by 11' 8".

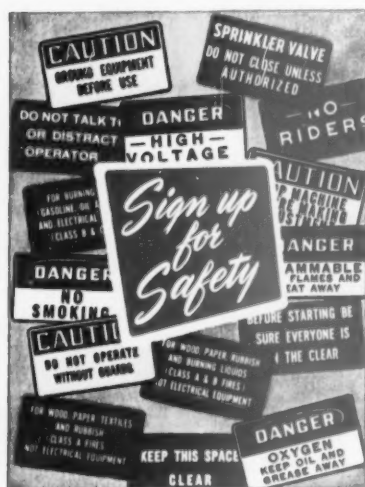
IT'S NEW!

THE new 1953 Directory of Occupational Safety Posters has been mailed to all National Safety Council industrial members. *It contains miniatures of 756 posters—top-notch selections on a great variety of subjects.*

All posters shown in the Directory will be stocked during 1953. Additional copies are available at 50 cents each—write to Membership Dept., N.S.C.

Posters miniaturized on this and the following pages are NEW—produced and shown for the first time. Excepting the Jumbo poster (left, upper), all will be in stock throughout 1953. Those posters shown in one color on the following two pages are actually printed in two or more colors.

For a more successful poster program: first, make your selections from the brand new posters shown on these pages and also from the hundreds of illustrations in the 1953 Directory.



NATIONAL SAFETY COUNCIL

9803-A

8 1/2 x 11 1/2

This new four color poster is illustrative of the 72 four color posters shown in the 1953 Poster Directory.



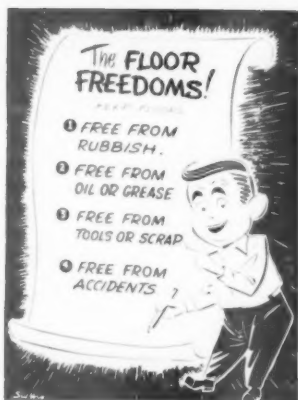
9846-C

25x38

Above new "C" poster, issued monthly, is indicative of the other two color posters—shown in one color on the following pages and in the 1953 Poster Directory.

Electrotypes of poster miniatures on this page are not available, nor can payroll inserts be supplied.

Posters below are printed in two or more colors
(Available only in sizes indicated)



NATIONAL SAFETY COUNCIL
9820-B 17x23



NATIONAL SAFETY COUNCIL
9768-B 17x23



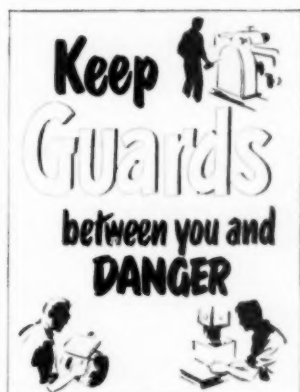
NATIONAL SAFETY COUNCIL
9812-B 17x23



NATIONAL SAFETY COUNCIL
9813-A 8½x11½



NATIONAL SAFETY COUNCIL
9763-A 8½x11½



NATIONAL SAFETY COUNCIL
9654-A 8½x11½



NATIONAL SAFETY COUNCIL
9785-A 8½x11½



NATIONAL SAFETY COUNCIL
9776-A 8½x11½



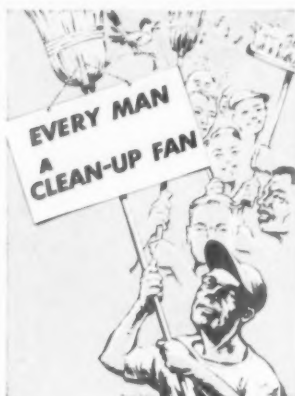
NATIONAL SAFETY COUNCIL
9815-A 8½x11½

Electrotypes of payroll inserts can be furnished on all poster illustrations shown above.

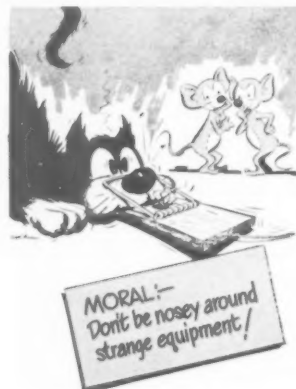
Posters below are printed in two or more colors
(Available only in sizes indicated)



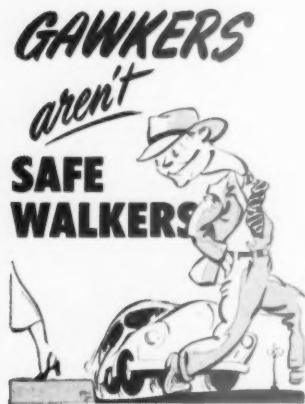
9761-A 8½x11½



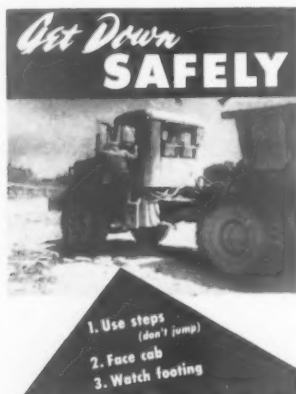
9692-A 8½x11½



9769-B 17x23



T-9757-B 17x23



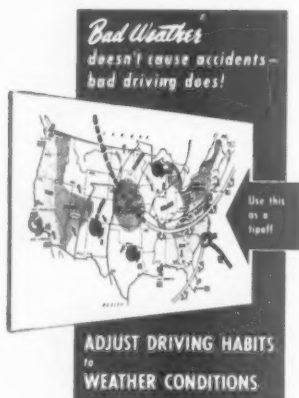
9806-A 8½x11½



V-9817-A 8½x11½



V-9818-A 8½x11½



V-9816-B 17x23



V-9819-B 17x23

Electrotypes of payroll inserts can be furnished on all poster illustrations shown above.

The Other Side

—From page 25

ating responsibilities in the shop, he was dead right. He didn't have time to do a good job on one, to say nothing of three. But all three it had to be—and it was up to me to find a way he could do it without spreading himself so thin he'd really be doing none of the three.

I could, I suppose, have let him work it out. That's what old Claude Jackson, or even Lars would have done. Put it on an or-else basis. Challenged his ingenuity. But I looked into that fellow's irritated, anxious face and saw it in too close a mirror of my own mood when last month's consultant was telling me how to run my job.

So, with a silent prayer that it would work, I suggested to him that I lend him Harry Dexter for three weeks, not to run the program, but to do some urgently needed training, to help set up and indoctrinate some safety committees to take over some training,

but principally to become the legs of safety inspection in the plant.

"Look," I told the safety-personnel man, "I'm not loading you with another 'expert'. I'm giving you a good kid who knows the ropes and who can help you over the initial push. If you work together well, you'll come out of the three-week period with a committee set-up that will take most of the work off your shoulders, yet leave you in control."

I didn't convince him, I guess, but he was confused enough at that moment to agree to anything which left some of the responsibility on Harry and me. We went back to the plant manager, and my little display of force over the eye program had convinced him that I carried some weight. Anyway, he didn't buck.

Then I called up my best friend among the optical company men to set up the eye survey, getting

NOLAN ONE-MAN CAR DOOR OPENER



Opens Doors in 20 seconds or less



The Nolan Car Door Opener gives one man a tremendous amount of pulling energy, to get the most stubborn, hard-rolling door wide open in a hurry!

No gangs needed. No mangled limbs or loss of life. A few quick pulls on anchor chain gets any door open in a jiffy. The NOLAN saves its low initial cost in first hour of operation.

New safety and efficiency features now make the Nolan 1-Man Car Door Opener a more necessary labor-saving, money-saving help than ever before.

**MANY THOUSANDS IN
CONSTANT DAILY USE!**

Free Literature.

Order one or more
NOLAN Model-H Car
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\$29⁵⁰

Catalog on request. F.O.B. Bowerston

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126-C Pennsylvania Street, Bowerston, Ohio

Stop Athlete's Foot!

ONOX

SKIN TOUGHENING!



ONOX
SPONGE RUBBER
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**Used by Over 70% of the
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No splash • No mess • No waste • Odorless

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Men like Onox • It relieves tired, aching feet

Modern research has upset the old theories about Athlete's Foot control. Skin specialists now say that the best chance of preventing Athlete's Foot is to improve the condition of the skin. *That's what Onox does.* Onox mineral salts toughen the skin and make it resistant to fungus growth. No fungus growth—no Athlete's Foot.

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We will ship prepaid your trial order for any amount of Onox and footmats. *You pay nothing* unless fully satisfied after 60 days' use.

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HOLDS CAR WHEELS FAST

It will not slip. Reduces danger of costly accidents and injuries.

SAVES TIME

Can be put in position in one quick operation—no ties, blocks or shims necessary.

COMPACT, COMPLETE UNIT

No chance of parts being lost. Wedge attached to clamp with strong steel chain; sturdy handle makes carrying easier.

M & M RAIL CLAMP

Order now. Available in two sizes to fit any rail, worn or new; Model A-40 to 100 lb. rail; Model F-110 to 175 lb. rail. *Immediate delivery.*

**SAFETY FIRST SUPPLY
COMPANY**

425 Magee St.
Pittsburgh 19, Pa.



his agreement to assign a good guy on his staff that I've worked with before to do the job.

After I left there, I dropped by National Safety Council headquarters to set up a basic membership program for the new subsidiary. I told the setup to Mark, my staff representative.

After we agreed on details, Mark said, "Why not get a safety man in there?"

"Too small," I said.

"Nuts," Mark replied, with a remarkable lack of awe for a past general chairman. "He'd pay his way, if he was any good. A personnel man, spread out over a dozen activities is a feeble kiss-off for a tough job that will take some real doing."

"I'm lending him Harry," I said.

"Yeah, for three weeks. He's a smart lad, in case you hadn't noticed it. But you or I—and we're a lot more experienced and just as smart—we couldn't tackle a 500-man plant for three weeks and set it up properly so it would run its own safety program. He'll

do some good, but not enough."

As usual, I suppose, Mark is right. But maybe it will work, with the resources of the corporation safety office behind it, with an occasional visit from Harry or me. I said something to that effect to Mark.

"Look," he said. "I know you. You run a good program. You can train subordinates, which is something most safety men can't do. But you can't run a program without subordinates, unless you're on the ground, and you can't be working Chicago steadily. I say you're letting yourself in for a headache that'll last just as long as you try to play it without decent safety personnel on the spot."

Well, we'll see. For the moment, I'm stuck with the decisions I made and sold to the plant management. If I try to reverse them, it will look as if I'm floundering. But Mark has done one thing—he's wakened in me the sense that I'll have to watch the thing closely, and rethink my approach fast if events prove him right.

STA SAFE FACE SHIELDS

for comfortable, efficient protection



No. 5 FACE SHIELD

StaSafe face shields are designed for full face, lightweight protection against sparks, acids and flying particles. The wide plastic front affords clear vision, while ample clearance also allows ventilation and assures comfort when wearing glasses. This front is cellulose acetate and easily replaceable.

Write now for Bulletin No. 578. Find out about the Hinged-Offset Headgear that allows for a two-way adjustment and perfect fit. Find out about our entire line of Face and Eye Shields, Routers Masks, Flash Mask and Open Hearth Shield.

STANDARD SAFETY EQUIPMENT COMPANY

232 West Ontario Street, Chicago 10, Illinois

Industrial Health

—From page 64

to silica. Five of these cases were advanced sufficiently that they recommended a change of job and one individual was recommended for hospital care.

Reports of pneumoconiosis in European workmen have described typical nodular silicosis in some instances, but this diatomaceous earth is heavily contaminated with silica which probably accounts for this nodular lesion. In one Italian report the individuals who developed pneumoconiosis were engaged in the manufacture of silica filter candles in the course of which manufacture the diatomaceous earth was heated until it was changed to cristobalite and tridymite, both of which are considerably more toxic to tissue than is ordinary crystalline silica.

In the diatomaceous earth industry on the West Coast where these studies were carried on, the diatomaceous earth is relatively free from admixture with crystalline silica. Also, the crude material is not in a state to produce very large amounts of dust so that pneumoconiosis cases are not very common in the quarries or mines.

In the plants, the crude powder is dried, ground and air classified and some grades are calcined or flux-calcined and again milled and air classified before packing. This drying and milling of the material leads to the production of considerably more dust than is seen in the quarries.

These authors have clinically examined the employees of six Pacific Coast plants and have also carried on some animal experimentation and obtained autopsies on 20 workers employed in industry, of whom four died of diatomaceous earth pneumoconiosis.

The reaction of the lungs to diatomaceous earth is quite different from the reaction to crystalline silica in that these cases have all shown diffuse thickening of the lung tissue, particularly in the area around the blood vessels. These thickened areas tend to coalesce and break down and then



SEE PAGE 11

The New
ALBINA

Circular!

MECHANICAL STIRRUP

Ideal for: Grain Elevators, Tanks, Storage Bins, Etc.

Safety approved by
State, Municipal,
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**ALUMINUM DIAMOND PLATE
DECK PLATFORM**

Platform as shown may be used as a 6, 16, 22 or 28-ft. swing stage. Platform consists of two 6-ft. and one 16-ft. sections. Can be used as a swing stage, single stirrup or basket. Air or electric operated.

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is DOCKSON GOGGLES

BE SAFE against sparks, dust particles, chemical splash and fumes, glare and injurious rays with DOCKSON GOGGLES in more than 20 models and a full line of modern lenses for all hazards.



BE COMFORTABLE with smooth-sitting DOCKSON GOGGLES. Excess weight is engineered out.



BE ECONOMICAL, get longer use from DOCKSON GOGGLES. "BUILT FOR BETTER SERVICE".



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to form scar tissue. There is also enlargement and formation of scar tissue in the lymph nodes in the lungs.

On the X-rays these conditions show as exaggeration of the linear marks in the lungs and generalized mottling of the lung fields which has been referred to as reticulation or "orange peel" appearance. In the more advanced disease the coalescent lesions appear as large opacities in the X-ray picture and are usually followed by contraction of the lung tissue and by development of cavities in the lung tissue.

The disease has been observed to progress for as long as three years after the exposure was terminated.

The appearance of the coalescent shadows in the X-ray pictures does not necessarily indicate infection with tuberculosis. Several of the individuals who have shown this effect gave no tests for tuberculosis in life and showed no sign of tuberculous infection at necropsy. The individuals with the

pneumoconiosis who did have tuberculosis seemed to show a relatively slow progress of the disease until cavitation occurred after which the patient's course was generally down hill in spite of any treatment.

The diatomite deposits are of two kinds. The diatomite which has been deposited from fresh water lakes appears to be considerably less toxic to human tissue than is the diatomite deposited from sea water.

Most of the individuals who showed pulmonary lesions have been in the industry for 15 to 25 years, although there are a few exceptional individuals who developed massive pneumoconiosis in two to three years.

Silicosis

Some Problems in Roentgen Diagnosis of Silicosis, by Eugene P. Pendergrass. The Journal of the American Medical Association, 150:1178-1179 (November 22, 1952).

The X-ray aspects of silicosis have been studied and the criteria for proper diagnosis are very well

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Built for hard industrial use—and abuse! Cigarets, cigars, matches extinguished immediately—no smoldering—no fire hazard.

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the job—
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Dept. A.

116 So. Garfield Avenue

Peoria, Illinois

known to a number of physicians. It is generally conceded in this country that the roentgen examination is the best method of demonstrating the pathological changes produced by silicosis. It is not customary to diagnose silicosis in the absence of positive X-ray evidence. At the same time there are certain difficulties of personal observation and certain difficulties of recognition of lesions in the X-ray. In spite of the general impression that lesions of two to three millimeters in diameter are regularly recorded on the X-ray, three instances are cited of various lesions one to five centimeters in diameter which have been missed on repeated X-ray examinations.

There is also the difficulty of misdiagnosis where there are single small massive silicotic lesions with other nodulations which do not show in the X-ray picture. These cases can be diagnosed as carcinoma of the lung and such cases have been

seen in which the silicotic nodule has been recovered at operation.

Pendergrass has also made the observation that large silicotic lesions will migrate toward the hilum area of the lungs on continued repeated observations. This will explain atypical distribution of some of these lesions.

Safety's Arctic Outpost

—From page 19

Department consists of a chief and seven men and is equipped with two 200-gallon pumpers and a jeep equipped with a battery of six CO₂ cylinders. Available for use in all strategic locations are the types of first aid fire fighting extinguishers suitable for the exposure. Although Blue Jay has sustained some serious fires in the past, it is believed, with the present intensified campaign to make all men fire prevention conscious and with the organization of fire prevention committees in each divi-

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7 training films for commercial drivers, showing

- Getting the facts when an accident happens
- How to back safely
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- Driving too fast for conditions
- Preventive maintenance
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- How to stay out of trouble at intersections

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STUDIOS

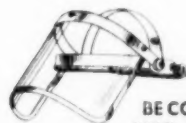
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BE COMFORTABLE—reduced weight, ample ventilation, special stay-put spring pivots, adjustable headgear are important in DOCKSON FACE SHIELDS.



BE THRIFTY, get longer use from DOCKSON FACE SHIELDS . . . every one is "BUILT FOR BETTER SERVICE".

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WHEN WORKERS WEAR



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WINDSOCKS

The Safety Hat Liners
That Need No Installation

9" length \$2.64 Doz.

11" length \$3.00 Doz.

Windsock is a throw-away type head covering that's easy to use. Inexpensive—it actually costs less than the time alone spent by a worker in installing or in removing a permanent type liner. Warm, lightweight and snug-fitting, Windsock puts an end to those chilly drafts that whistle between the safety hat shell and cradle.

Write for Descriptive Bulletin No. 579

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232 West Ontario Street, Chicago 10, Ill.

Production Goes Up

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Stanzails®
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Proper protection and comfortable fit go hand in glove with Stanzails to boost your workers' efficiency and send your company's profits soaring!

Work stoppage and injury claims decrease . . . medical expenses decline . . . employee relations improve and production increases—when you order the right liquid tight acid and oil resistant neoprene Stanzail gloves for each job. Choice of 32 long-lasting styles, weights, sizes, colors . . . write for PIONEER Stanzail catalog today.

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The **PIONEER** Rubber Company
237 Tiffin Road • Willard, Ohio

Quality Gloves for 35 Years



N-32 medium weight straight finger style neoprene glove. Non-slip grip surface. 10½" length.



sion, that the number of fire, and their effects, sustained in the future, will be minimized.

The number of lost-time injuries sustained by falls has been very few. A constant campaign to keep all workmen ever on the alert against this type accident and the use of well designed mechanical guards, wherever possible, has cut the Blue Jay rate below that of a normal stateside job.

Surprisingly enough, there have been no lost-time cases reported as a result of frostbite. Each man in this case is his brother's keeper and is charged with the responsibility of watching his fellow worker, warning him of the advance signs of danger of this type. This system has enabled the workmen to catch the frostbite cases in their earliest stage and prompt medical treatment has minimized the effects of the damage.

As the work is carried on to a limited degree during November, December, January, and February, through a 24-hour day of darkness, the problem of personal safety and efficient use of equipment is greatly aggravated by lack of natural light. As a protection to pedestrians, all outside garments are provided with a reflecting tape, both front and rear. Lifelines, equipped with directional signs to the nearest shelters, are placed in critical areas. Emergency shelters, equipped with stoves and emergency rations, are placed in the outlying areas. These buildings are designed as emergency protection for travelers to and from the outlying areas and are placed at approximately five-mile intervals.

A major contributor to Blue Jay's good safety record is the Medical Department. This section is manned by five physicians, eight registered male nurses, eight first aid men, two dentists, one laboratory technician, and one X-ray technician. It is said that the best and most complete hospital in the world, north of Montreal, Canada, is located at Blue Jay.

It is the policy of the contractor's management to operate a good maintenance program. As a result of this policy, accidents due to the mechanical failure of equipment have been kept to a

minimum. Adequate facilities for all types of maintenance and repair work are available to a group of some of the most highly skilled mechanics ever assembled in one job.

Last, but not least, in its contribution to a good safety record, has been the program instituted by the contractor to have the workmen utilize their leisure hours constructively. Available for the use of all concerned are free movies, a very complete library, a hobby shop, a recreation room, a music room, the local radio station which broadcasts 21 hours a day, and the local daily paper.

Only through the active combined efforts of the top management of The Corps of Engineers, the contractor, and the insurance company has it been possible, under such rigorous conditions, to attain a safety record which is five times as good as the average construction, of this type, in the Continental United States.

Check It

—From page 35

and engineered, being made of heavy gauge sheet metal, fully grounded, protected by a fused circuit, operated at a safe voltage of 6 volts, and contains heavy duty contacts, relays and good wiring inside.

Further, the use of the instrument is not confined to power hand tools. It may be used to test extension cords, extension lights, electric fans, vending machines, pedestal grinders, office machines, desk lamps, floor scrubbing and polishing machines, and, in fact, any single-phase electrical device which receives its power from a receptacle. Incidentally, the instrument contains receptacles that will accommodate any type of electrical cap. All that is necessary is to operate the three push buttons in proper sequence, testing all circuits and watching for the safe (green light) and unsafe (red light) conditions.

Location for Use

The most logical location for use of this equipment is in the tool crib and the test can be performed by a tool crib attendant. Tools are



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Wooden Soles Insulate
Strong steel toe

FOR THE FACTORY...

No. 504-S

Wear a Reece "Strong Toe." Comfortable leather uppers. High, roomy steel toe protector, heat-resistant wooden sole. Have comfort-safe feet at work in oil refineries, foundries, steel mills, factories.




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The Reece "Hot Foot" sandals. Protect your feet in furnace and coke oven rooms. Straps on over your own shoes. Heat resistant wooden sole, strong galvanized iron counter, flexible hinge toe. Cannot slip.



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WITH A REECE "HOT FOOT"
SANDAL!

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Safe Height
ALUMINUM PRODUCTS

King Wrong and Whitey

Whitey Says:

Yes! Wipe off those dirty, greasy, slippery tools with an industrial shop towel. Rent them from your local member of the:

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1627 K Street, N. W. Washington, D. C.

be fresh *stay fresh*

wear a

DUPOR No. 40

the Respirator that is
U.S.B. of M. Approved
for Type A Dusts

More than 40 sq. in. twin filter area.
Sanitary face cloth. Soft rubber face mask. Controlled breathing . . . check valves guard against re-breathing stale air . . . exhalation valve exhausts breathed air. Greater visibility . . . no blind spots! Does not interfere with goggles or glasses.

Sample \$300
sent

H. S. Cover Fog-Proof, Gas-Tight Goggles for use with above respirator. . . . \$2.00 pp

H. S. COVER, South Bend, Ind.

tested as they are turned in or before being issued for use. If a tool proves defective it is immediately tagged and turned in to the electrical department for repair. Since a tool can be completely tested in seven seconds, this additional work places no burden on the tool crib. Weighing less than six pounds, it may also be used as a portable instrument to test tools at the point of operation.

Most electrical departments have accepted this new testing device because it aids them in spotting the hazard. It means that after a tool crib attendant has found that the equipment ground is broken or that there is a power ground, the tool is then tagged and sent to the electrical department and gives the electrician a clue as to what to look for rather than to spend time tearing down the entire equipment.

Dust Suppression

—From page 68

signed ventilating system merely serves to pollute the whole room, rendering conditions worse by dissipating impurities which would otherwise have polluted only the air above their point of origin.

Flat roofs offer the worst conditions for upward ventilation. The rising air does not converge to the point at which the fan is placed, but spreads horizontally on meeting the ceiling. The best way of dealing with such a state of affairs is to insert a false ceiling.

The false ceiling is perforated all over its surface and the extraction fans are installed in the ceiling above it. There is, therefore, an even extraction rate over the whole area of the ceiling and the rising air will be extracted at the point it meets the ceiling. The method is more efficient if hanging partitions are placed over areas where large volumes of fumes are generated.

Downward Ventilation

Rooms which do not contain hot processes may be ventilated downward, from roof to floor. This method is not so common in British industry, but there seems

to be a growing tendency to use it in Sweden. Its advantages are obvious and it extracts dust and fumes without lifting them past breathing level in the process. The general method is to blow in suitably heated air at roof level. The incoming air may be blown through distributors or through a perforated false roof.

In the latter method a second, perforated, ceiling is placed below the ceiling and air is introduced under pressure between the ceiling and the false ceiling, so that it enters the room through the perforations in the false ceiling. The air is extracted below breathing level, and if the processes in the room are provided with local exhaust ventilation this may serve to extract all or part of the air. The whole system needs careful balancing.

Supply of Outside Air

All the air extracted from a building must be replaced by fresh air from outside, and this incoming air should be under control. This is because the uncontrolled ingress of air may short circuit the general ventilation system and give rise to drafts. In hot processes they may be strong enough to vitiate the whole ventilating system.

The incoming air should be clean, and great care should be taken to avoid contaminating this air before it enters the building. Air intakes should be arranged so that they cannot draw dusty air from outlet ducts which are discharging from other parts of the building or from particular processes.

One method of preventing this is to place outlet ducts high up over the buildings. These outlet ducts should be designed to discharge at high velocity, so that the used air will be carried away from the factory.

Outlet ducts should never be fitted with covers. These covers restrict the discharge velocity and baffle the air stream, so that the spent air is turned down over the factory roof, instead of being delivered high up into the outside atmosphere.

Ideally, incoming air should be delivered to the place at which it



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when the snake strikes...you have 10 minutes!

... this requires dependable, controlled suction to prevent the poison from spreading. In the New Improved Saunders* Kit, all components are packed for quick, easy use. Only the Saunders* pump carries a performance guarantee. Easy to operate by the victim alone if necessary. FITS ALL STANDARD UNIT TYPE FIRST AID KITS. When advisable can be carried on the person in belt pouch. Write for details.



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is needed, because if it is introduced at some distance from this point it will mix with fumes from other sources as it passes through the building. It will, in any case, lose its velocity if it has to travel long distances. If velocity can be maintained, a smaller volume will be needed. On the other hand, drafts must be avoided so that incoming air should not be delivered in the form of a jet, which might impinge on the occupants of the room. When the air has lost its velocity in transit it may still be controlled by reason of temperature.

In plenum systems, it has been found in Sweden that the incoming air can be introduced at a lower temperature than that of the air in the room. As the air is blown in at a height of about 7 feet, this cool air falls to the floor. The angle at which it falls can be controlled by regulating the inlet temperature and the whole system gives a sweeping effect as the cool fresh air falls to the floor before warming up and rising to the roof extractors. This kind of control offers real possibilities, although further information is still needed to obtain the correct air movement by judicious use of velocity and temperature.

One final point might be noticed in general ventilation technique. Certain industries produce large volumes of dust and fumes at particular stages in the process. In these cases it may represent a considerable saving in heating costs if the general ventilation system is designed so that the extraction volume can be increased to meet the short periods at which the maximum dust or fume production occurs.

Tact is giving a person a shot in the arm without letting him feel the needle.

"Smithers," said the boss to a meek employee, "I understand you've been going over my head."

"Not that I know of, sir," replied the employee.

"Well, isn't it true that you've been praying for a raise?"

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WRITE FOR BULLETIN NO. 44



Safety Equipment for all Industries

INDUSTRIAL PRODUCTS COMPANY

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Here's an Idea Worth Crowing About

A problem in industry insofar as the use of overhead cranes is concerned, has been that of warning persons under the load. Usually the conventional warning bell or horn is so familiar to the shop employees that they ignore it.

In some plants the rigger or floor man walks ahead of the load, blowing on a whistle. In some cases even this is not satisfactory.

Corporate Service, Inc. has come up with one solution to this problem, according to J. E. Moore, vice-president, engineering. Instead of a whistle the riggers use a crow call—the device crow hunters use to decoy crows in range of their guns.

This method of warning of an approaching load is working out very satisfactorily. Mr. Moore says, and the riggers are having a lot of fun with the devices. They start the warning "call" rather gently and then if the person or persons they are trying to warn ignores the call the riggers proceed to give them the works.

Mr. Moore says you can practically talk with the device—crow talk, that is.

Work Clothing Booklet



The Institute of Industrial Launderers' "Hero" Whitey overshadows the "villain" King Wrong on the cover of this 24-page booklet which urges users of work clothing to go to Institute members for help in solving their problems for fire-safe and clean work clothing, gloves and other protective items. The booklet reinforces the many Council posters, films and technical publications on the same subject.

National Safety News, February, 1953

Free Booklet

how to save money in maintenance...

Send for this complete guide to the right scaffolds and ladders for cleaning, painting, electrical work, plant and equipment maintenance, etc. It lists types of jobs and tells you which equipment is best for each. It's packed with pictures and ideas on how to cut your off-the-ground maintenance costs and increase safety. Years of scaffolding know-how condensed for you... and it's yours without cost.

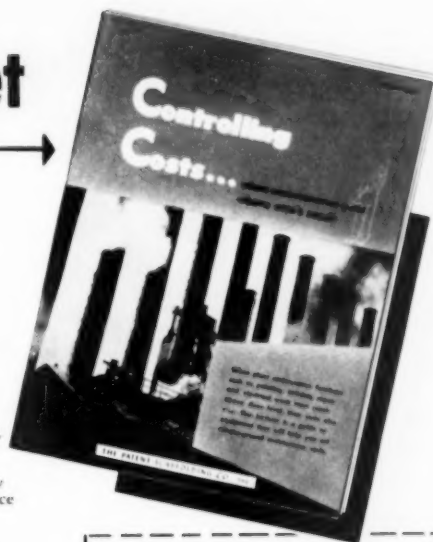
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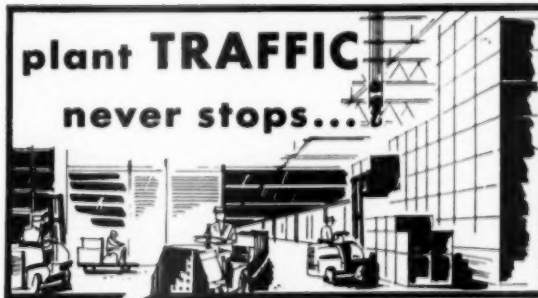
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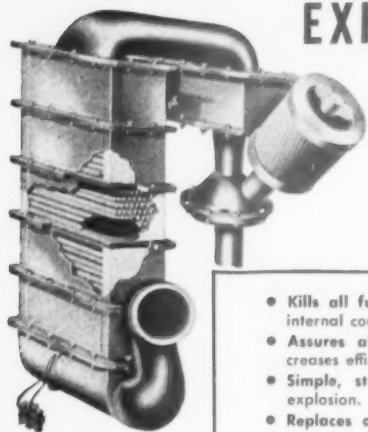
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2339 Gilbert Ave., Cincinnati, Ohio

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Calendar Contest Winners For December

First prize in the National Safety Council's Safety Calendar Contest goes this month to Mrs. L. L. Trompeter of Topeka, Kans. The theme in this contest was get help when needed. Mrs. Trompeter's line was adjudged the best of all those submitted. It was:

For TEAM WORK doesn't SEEM work you see!

Second prize went to Ray Trail of Hollywood, Calif., for this line:

There's a spouse in the house—and fee-free!

Third prize was awarded to Mrs. Paul Omann of Sayre, Okla., for the following line:

Need a lift? Try some vitamin "he"! The December limerick was: She's heading for trouble, poor Bea, With her move-all-the-furniture spree. She'd sure better yelp For some masculine help

Thirty \$5 awards were issued to:

Blanche M. Salmon, Washington, D.C.
Miss Dorothea Dunlea, Pasadena, Cal.
Mrs. T. E. Lowery, Oneonta, Ala.
R. T. Gidley, Dallas, Tex.
Mrs. Freda Kenney, Columbus, Ohio.
Roger W. Dana, Kimberly-Clark Corp., Menasha, Wis.

Miss Susie Mae Smith, Tuscaloosa, Ala.

Mrs. H. D. Smith, Utica, N. Y.

Ivan Herring, power department employee, Dow Chemical Co., Midland, Mich.

Mrs. Ruben R. Buettner, Minneapolis, Minn.

Mrs. John Uding, Ogden, Utah.

Miss Jessie E. Strader, Aberdeen, S. D.

Gertrude Larkin, machine operator, AC Spark Plug Corp., Milwaukee, Wis.

Charles R. Bahde, Plattsmouth, Neb.

F. H. Pollard, Clemson, S. C.

Mrs. H. W. Guenther, Tahlequah, Okla.

Ramie L. York, Binghamton, N. Y.

Ardith Dolowy, Chicago Heights, Ill.

Arnetta Bjornson, secretary, Miller Products, Portland, Ore.

Winifred Sotolongo, file clerk, Lehigh & New England Railroad, Bethlehem, Pa.

Mrs. John F. Davis, Washington, D. C.

William W. White, Tulsa, Okla.

Mrs. Mae B. Edwards, clerk-stenographer, Farmers Home Administration, Charlotte, N. C.

Mrs. Julia Bea Blakeney, Dallas, Tex.

Miss Marjorie Ball, Parma, Ohio.

W. Burmister, Firestone Tire & Rubber Company of New Zealand, Ltd., Christchurch, N. Z.

Walter Menning, Alpha Portland Cement Company, La Salle, Ill.

Mrs. Elizabeth S. Anderson, Chemical Engineering Department, Dow Chemical Co., Midland, Mich.

Joe Slosarcik, Socony-Vacuum Oil Co., Inc., Gary, Ind.

J. R. Rowe, Universal-Cyclops Steel Corp., Pittsburgh, Pa.



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Power to Your Words

—From page 23

tion of used cameras found in many stores. But unless a person is familiar with the subject and can appraise quality and condition of such bargains, he might be better off buying a new unit or approved make within his price range. However, many dealers back their used camera offerings with dependable guarantees.

Good dealers can be most helpful in making selections that fit the need, and the reputation of manufacturers often may be insurance against poor quality.

Some of the less elaborate lens systems may be all right for certain kinds of pictures, such as portraits and many pictorial subjects, where lack of sharpness may not be undesirable. But one who will use his camera for teaching will require a sharpness of detail in his negatives and color positives that can be achieved only with an anastigmat lens. Some of

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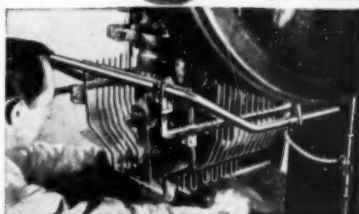
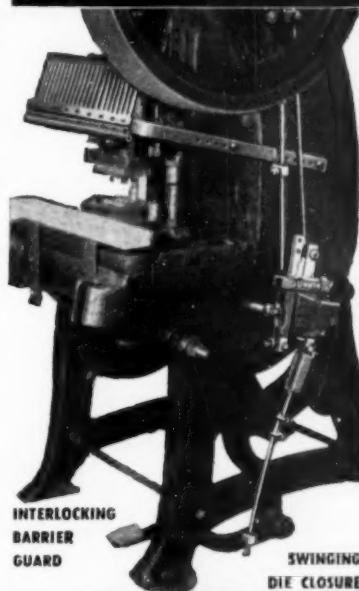
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the slower anastigmat lenses are moderately priced.

When buying a new camera for such purposes, it is well to consider the frequent need for flash exposures in making pictures in the plant. Many of the newer shutters have an automatic switch to close the flash battery circuit. These and other shutters equipped with special synchronizers make it possible to shoot from the hand.

When the camera is used on a tripod, excellent flash pictures can be made by the "open flash" method, without special shutters or synchronizers. The shutter is set on "B" (for "bulb") operation. The cable release is pressed to open the shutter, the flashbulb is fired and the cable released, all in less than a second. Of course, subjects must be motionless for such a shot.

For use in the shop, one of the most desirable types, perhaps, would be a miniature camera using 35 millimeter film. Not only can good black-and-white enlargements be made from the sharp

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Dress shoe appearance with work shoe durability! That's the winning combination in these moccasin-type safety shoes. Their handsome elk tan uppers are stitched throughout with "Dacron"*—even down to the weather-proof storm welt. And the lightweight *cellular neoprene* soles are tops in appearance, comfort, and long wear.

The trim *cellular neoprene* soles on these sturdy shoes are the newest development in the shoe sole field. They provide lightness, cushioned comfort . . . add skid resistance and extra-long wear. Thousands of tiny cells throughout the soles absorb shock and give buoyant support. And cellular neoprene soles resist grease and oil . . . stand up under heat and constant abrasion without cracking or losing their shape.

This new Rico safety shoe is another example of how a manufacturer used *neoprene* soling to make a superior shoe.

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negatives made in such a camera, but it is ideal for making direct color transparencies that can be projected as color slides at safety meetings.

When workers see themselves and fellow employees in full color on the screen, there is no doubt about holding their interest and driving home the lesson under discussion.

In many cases, it is possible for the safety department and supervisors to arrange for staff photographers to shoot the pictures needed for a training lecture or for bulletin board publicity. However, if you can take the trouble to master your own camera, and will use it whenever you have an idea you wish to illustrate, photography will have a greater meaning in your program.

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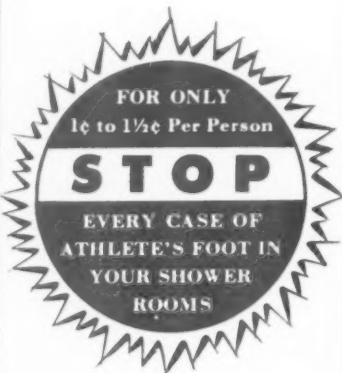


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New safety equipment for industry

Further information on these new products and equipment may be obtained by writing direct to the manufacturer or to National Safety News. Accompanying coupon is for your convenience.



Resuscitator

An aspirator for use in conjunction with the portable, manually-operated Kreiselman bellows resuscitator is now supplied by the Ohio Chemical & Surgical Equipment Co. This device, the Model 116 resuscitator, is complete with aspirator, mask, airway, and mask elbow in a handy carrying case.

The two-pound resuscitator is designed for use wherever respiratory failures may



occur and is particularly adaptable to the needs of police cars, ambulances, fire companies, boat houses, beaches, schools, and mines.

The unit consists of a bellows of about 1600 cc capacity, a face mask, and a valve placed between them. There are valves for the intake of air and oxygen, and a safety valve which limits pressure to 20 mm. Hg. All valves operate automatically. For further information write:

Ohio Chemical & Surgical Equipment Co., Madison, Wis.

Item No. 1.

Non-Flammable Cable Clamp

A non-flammable plastic cable clamp made of Saran, a tough, strong thermoplastic material, is now available.

Other characteristics are its inertness to fungicidal attack, ability to withstand changes in atmospheric conditions and resistance to corrosion or sweating. Saran is not affected by prolonged immersion in water and remains stable when exposed to mild acids, chemicals, oil, etc. It is non-toxic and has abrasion resistance. Because the material is pliable, this clamp can be opened to any dimension for easy sliding over wires, cable, pipe or tubing. Edges are rounded to prevent damage to insulation, etc. Clamps are made in 17 stock sizes, ranging from $\frac{1}{8}$ to 1- $\frac{1}{4}$ inches.

Holub Industries, Inc., Sycamore, Ill.

Item No. 2.

Load Protector

New metal "Hinge-Guard" load protectors have been developed for transporting

steel coils, sheets, pipe, tubing, lumber, clay products, crating, machinery, paperboard, etc. They also aid in protective unloading. Any chain or cable contact



with the load is prevented. Increased chain tension makes loads more compact, less likely to shift.

Two pieces hinge-lock together to make the unit which will angle from 90 to 180 degrees, can be used singly by simply lifting the two pieces apart. They accommodate chain or cable up to and including $\frac{1}{2}$ inch and if grabhook is already secured to chain, it will thread through the unit.

Canton Manufacturing Co., 2408—13th St., N.E., Canton, Ohio.

Item No. 3.

Safety Goggles

The AO 481 safety goggle incorporates changes over previous models widely used in light industrial and laboratory operations. It provides frontal and lateral protection through a clear plastic lens and



transparent, green, vented binders which fit snugly to the face. It is of the same

construction as the AO 479 all clear and AO 480 all green goggles, but since there has been a large demand in certain industries for a modified version, the AO 481 is available on special order. The wearer has a clear view in front and can readily see to the side though his eyes are shielded against glare by the green coloring of the transparent binders.

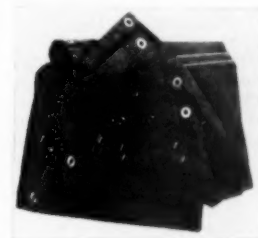
It gives protection over a wide area against flying foreign particles and splattering chemicals in many operations, including light machine and hand-tool work, chemical laboratory work, spot welding, light grinding and other similar tasks.

American Optical Co., Southbridge, Mass.

Item No. 4.

Flame-Resistant Curtains

Impregnated, flame-resistant canvas curtains and blankets that can be hung to form inexpensive booths to screen off dangerous operations afford protection for workers near arc welding and other operations where are flash, molten splash, flying chips, scale, etc. are produced. Curtains are made to individual requirements



from 8, 10 or 12 ounce duck and from Underwriters' grade asbestos cloth in sizes to over 100 square feet. They contain sturdy, firmly fastened brass grommets a foot apart on one long side. All edges are hemmed and seams are double row stitched for added strength. For additional information write:

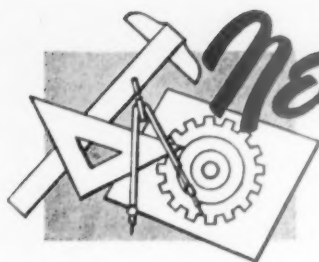
Eastern Equipment Co., Inc., Willow Grove, Pa.

Item No. 5.

Miniature Circuit Breaker

"Mini-Breaker" is a new permanent type circuit protective device that fits like a fuse in any standard Edison base fuseholder delivering up to 125 volt a.c. service. It requires no additional equipment and no special wiring when applied to branch or main circuits of corresponding 15, 20, or 30 ampere ratings.

While similar in size to the fuse it is designed to replace, Mini-Breaker is a



New safety equipment for industry

Manufacturers are invited to send in announcements of new products, or improved special features. Only items which can be considered as "news" to our readers will be published.

precision-built thermally actuated circuit protective device consisting of 25 parts self-enclosed within a special tamper-proof insulating case. In operation, it interrupts excessive overloads and short circuits, tripping instantly on "shorts," but with a built-in time lag to handle temporary starting loads and line surges. Service can normally be restored within 10 seconds after interruption merely by pressing and releasing the reset button. It will not maintain a circuit that has not been cleared of the condition that caused the interruption. Any attempt to reset the device against an overload or "short" only results in increasing the speed of tripping.

Designed primarily for direct fuse replacement use on existing residential, commercial, and industrial circuits, the breaker may also be applied as original circuit protective equipment in new buildings as well as on a wide range of electrically operated machines and appliances. It bears the label of Underwriters' Laboratories, Inc.

Mechanical Products, Inc., 1824 River St., Jackson, Mich.
Item No. 6.

Attachable Hood

Here is something new in a protective hood which can be attached or detached to a jacket, coat or coverall by means of snaps at the neck. Buttons and button holes on the collar and base of the hood



do away with non-conductive fasteners. The wearer of protective clothing can wear the hood or not as needed. If he must wear a crash helmet or a rain hat in preference to the hood, it can be worn, and as long as the jacket or coat in question is equipped with either snaps or buttons the hood can be worn as an alternate. It is also equipped with listening holes at the

ears, covered with protecting flaps, and has a drawstring around the face that draws tightly in order to give full protection.

The H. M. Sawyer & Son Co., 20 Thorndike St., Cambridge 41, Mass.
Item No. 7.

Mobile Communication Systems

A new remote control unit for use with mobile radio communication systems designed for use with RCA's Carlone and "Fleetfone" systems, can be incorporated into all other mobile systems operating in the 30-50 or 152-174 megacycle bands.

The RCA Type CC-8A consists of a speech amplifier, power supply, speaker



amplifier, loudspeaker, and a set of controls. Operating over a single pair of telephone wires, it controls a remote receiver and transmitter by a system of relays. Dual transmitter selection is provided. Satisfactory operation is accomplished over distances of 10 miles between the control point and the remote equipment. The actual distance is limited only by the quality of the telephone circuits.

The unit is provided with an attractive steel cabinet measuring 6 inches deep, 13½ inches wide, and 9½ inches high. It weighs only 19 pounds, and can be conveniently mounted on desk, table, or shelf. The front panel contains a meter for monitoring line level, to prevent over-modulation. The panel also provides volume, dual transmitter frequency and intercom controls.

RCA Victor Division of Radio Corporation of America, Camden, N. J.
Item No. 8.

Ultraviolet Lamp

A new high-intensity ultraviolet lamp for installation in air-conditioning systems has been developed. This new "Safe-T-Aire" lamp is easily installed in regular air ducts where the circulating air is exposed to powerful ultraviolet radiations which destroy bacteria, viruses and mold spores.

Ultraviolet radiation's germicidal power

has been demonstrated in hospital contagious wards and operating rooms, as well as for the processing of products highly sensitive to spoilage from bacteria and mold spores.

This high-intensity lamp can be installed in multiples as well as singly, to sterilize any volume of air from room size to entire plant air conditioning systems. Full information is available from the manufacturer.

Hanovia Chemical & Manufacturing Co., 100 Chestnut St., Newark, N. J.
Item No. 9.

Magnesium Barrel Skid

All-magnesium barrel skid for drum and barrel handling combines light weight and ease of handling with capacity-rated strength. The new unit speeds the handling of drums and barrels, reduces the risk of lifting injuries, and assures greater safety to men and equipment. The skids are available in standard sizes, ranging



from 5 feet to 18 feet in length. Special sizes are also manufactured and for full information write:

Magline, Inc., Mercer St., Pinconning, Mich.
Item No. 10.

Cover Goggles

Larger cover goggles to fit over modern glasses known as series 548 and 549 are actually 20 per cent larger than previous models. They are available for both chip-ners and welders.

Wider bearing surfaces in the molded plastic frames reduce pressure points and provide a perfect seal which keeps out

New safety equipment for industry

Further information on these new products and equipment may be obtained by writing direct to the manufacturer or to National Safety News. Accompanying coupon is for your convenience.



flying particles or light flashes. Another feature in the chippers goggle is indirect ventilation through the slotted lens rings. Direct ventilation in this type is provided



through perforated side shields. Welders and dust models are indirectly ventilated through side shields. Both models have considerably larger air space within the goggles to reduce fogging.

Lenses are quickly replaceable from the front. Standard 50 mm. lenses seat flush with rings to deflect flying objects. Three adjustable headbands are offered: Comfort King round rubber without slides or buckles, elastic, or flat rubber.

Chicago Eye Shield Co., 2300 Warren Blvd., Chicago.
Item No. 11.

Grab Hook

The unique design of a new type alloy steel grab hook is said to provide additional strength. The manufacturer, the S. G. Taylor Chain Co., announces that all Taylor made alloy steel boomer chains will



be equipped with the new alloy steel grab hooks. Requests for individual hooks for boomer chains now in use will also be acknowledged.

S. G. Taylor Chain Co., Hammond, Ind.

Item No. 12.

Hand Cleaner

Magnus Chemical Co. announces the introduction of Magnus Cob Hand Cleaner, an addition to its line of hand cleaners. The product is a lightweight, free-flowing powder containing corn cob meal as the abrasive. It is ideal for those desiring a cleaner with a soft, mild abrasive.

The cleaner contains lanolin and the toilet grade soap used is of mild (pH 7.5) alkalinity. It produces a good lather, and rinses readily.

A free sample will be supplied upon request on company letterhead to:

Magnus Chemical Co., Inc., Garwood, N. J.

Item No. 13.

Portable Platform Stand

Designed primarily for warehouse and stock room use, this heavy-duty all aluminum platform stand is also used for plant maintenance and in machine repair departments. The following features are an-



nounced: Back legs mounted on non-swivel ball bearing casters for easy movement; large wheels for use over rough terrain; corrugated rubber safety shoes on front legs; working platform with non-slip surface; wide, ribbed, well braced steps; removable back guard rail. It is light in weight yet sturdy enough to withstand unusual loads. The stand is also made in 17½ inch width to permit use in file rooms or stock rooms with narrow aisles. Available in platform heights from 4 feet through 8 feet. Made by:

Metallic Ladder Manufacturing Corp., Sheldon St., Randolph, N. Y.

Item No. 14.

Crane Warning Device

A new model of the Electro-Alarm crane warning device has been placed on the market. It is known as the Junior Model Type CWD and comes with standard equipment for the average 50 foot boom crane. It is one half of the size of the Type CWC and two inches thinner, allowing ease of installation in the Unit type of cranes. All controls, and lights will be on the Master panel, thereby saving room in the cabs of compact cranes. This small model was made possible through the use of new type midget parts and tubes as compared to the oversize parts used in Model CWC.

Electro-Alarm, 745 Pleasant St., Fresno 5, Calif.

Item No. 15.

Safety Shoe

A new addition to the Iron Age safety shoe line is a plain toe oxford having a genuine all-leather sole tanned by the patented "Leather-plus" process for maximum flexibility and longer wear. Iron Age has the exclusive rights to the use



of this premium chrome-vegetable tanned sole in the safety shoe field.

Other features of the new safety shoe, No. 622, include a Winguard steel toe box concealed by a full leather lining, sweat-proof leather inner sole and a cushion of Armstrong cork filler with Dacron stitching throughout.

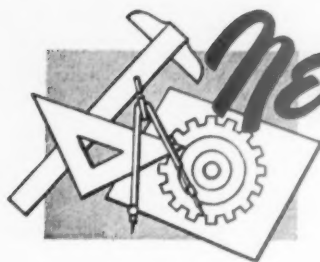
This military style oxford comes with soft, pliable brown leather uppers finished in a rich brown tone. It is featured in a new bulletin No. 53 which can be obtained by writing:

Iron Age Div., H. Childs & Co., Inc., Pittsburgh 12, Pa.

Item No. 16.

Clark Announces '53 Model Pallet Trucks

The first 1953 models in the Power-worker lift-truck line have been announced by the Clark Equipment Co. The new

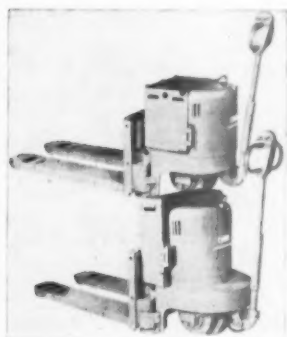


New safety equipment for industry

Manufacturers are invited to send in announcements of new products, or improved special features. Only items which can be considered as "news" to our readers will be published.

models are pallet trucks, electric battery-powered, with a capacity rating up to 6,000 lbs. These trucks can be supplied with pallet forks to handle any size pallet, either single or double faced.

There are two models, the "rider" type and the "walker" type. The "rider" truck has a tread plate where the operator can



stand comfortably; it takes power from a single-tray battery arrangement. The conventional model has a double-tray battery layout.

These trucks feature double hoisting cylinders for lifting the loaded pallet, 5 H. P. motor-in-wheel drive, full time delay control with all contractors interlocked for progressive speed positions, positive safety-spring return handle which applies brake and cuts off power, and a high bumper guard to protect the operator. Cast steel frame, forks and elevating carriage provide an over-all unit of great strength and stability.

The Powrworker is the shortest pallet truck capable of carrying a double-tray battery. This combination assures great utility in congested operating quarters. For detailed information write:

Clark Equipment Co., Buchanan, Mich.

Item No. 17.

Platform-Tread Stepladder

This newly designed platform-tread industrial stepladder combines ruggedness and rigidity and provides standing comfort



for the worker. The tread platform is sufficiently wide for firm footing which reduces strain and fatigue. Platforms not in use fold back out of the way. All 4' to 8' models carry Underwriters' Laboratories label. For complete information write the manufacturer.

Craft-Bilt Products, Inc., 440 Sixth Ave., N.W., Grand Rapids, Mich.

Item No. 18.

Corrosion-Free Extinguishing Liquid

A new inhibitor which eliminates the corrosive effect of the CB fire extinguishing liquid on aluminum tubing is now being used by Walter Kidde & Co.'s Aviation Dept. The company states that it prohibits CB attack of aluminum through chemical stabilization.

Formerly, after an airplane engine's CB fire extinguishing system had been actuated, low points in the aluminum tubing could be corroded through in a few hours.

The possibility of this chemical action necessitated inclusion of drain valves at low points in the system, purging after discharge, and similar protective measures.

The problem was complicated further by the necessity of using lightweight aluminum tubing, rather than heavier stainless steel, to conduct the fire extinguishing agent from its storage cylinders to each engine nacelle. Particularly on military aircraft, the weight requirements of few planes permit the substitution of corrosion-free stainless steel.

Item No. 19

News Items

James W. Wilcock has been appointed assistant general sales manager for the McKay Company, manufacturers of commercial chain, tire chains and arc welding electrodes. He will make his headquarters at the company's main offices in Pittsburgh, Pa.

Prior to his present appointment Mr. Wilcock handled the sale of all McKay Products in the Detroit area. In July 1951 he was transferred to the McKay Company main offices, where he served as Special Assistant in sales until his recent advancement. Mr. Wilcock is a graduate of the University of Michigan and Ohio Wesleyan University and a member of business and professional groups, including the American Welding Society.

* * *

Plans for a new chemical research laboratory with facilities for expanded study and development of chemical fire extinguishants, are announced by Stop-Fire, Inc., fire extinguisher manufacturer, Brooklyn, N. Y.

The laboratory will be established in an improved two-story building just purchased by Stop-Fire and located on property adjacent to the company's main plant at 125 Ashland Place, Brooklyn. The building will also in part be used for increased production of Dri-Kem, a dry chemical extinguishant recently developed by the company.

NATIONAL SAFETY NEWS

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Trade publications

in the safety field

These trade publications will help you to keep up-to-the-minute on new products and developments in industrial health and safety equipment. They are free and will be sent by manufacturers without obligation to readers of NATIONAL SAFETY NEWS who are responsible for this work. Send in the coupon below checked for the publications you desire. Please make your requests promptly.



1. **Floor Absorbent:** Brochure gives properties and advantages of Wyandotte Zorb-all, the safe floor absorbent that resists breakdown in water, resists traffic breakdown, too, and presents a maximum anti-slip, anti-skid surface wherever it is laid down. J. B. Ford Division, Wyandotte Chemical Corp.

2. **McDonnell Boiler Water Feeders:** Catalog No. C-49 covers boiler water feeders, low water fuel cut-offs, pump controls and relief valves. Also featured temperature relief valves and combination T&P relief valves, in both regular and dip tube models. McDonnell & Miller, Inc.

3. **Dry Chemical Fire Extinguisher:** Illustrated Bulletin SF-1001 presents complete details on construction and performance of the 3 lb., 5 lb., 10 lb., and 20 lb. "Redi-Flo" units, plus descriptive data on "Dri-Kem," a new non-caking dry chemical extinguishant employed in the "Redi-Flo" fire extinguisher. Stop-Fire, Inc.

4. **Saf-T-Line Markers:** Bulletin offers an efficient and economical Saf-T-Line Marker to solve the heavy traffic problems in plants, city intersections, parking lots, hospitals, etc. Campro Sales Co.

5. **"What's New for the Laboratory":** New booklet describes and illustrates the following: a high speed projection type balance; a device for trapping mercury blown from monometers; a surface temperature thermometer; two-stage vacuum pump; microscope with built-in illuminator; two accessories for the Beckman Model DW Spectrophotometer; and various other laboratory aids. Scientific Glass Apparatus Co., Inc.

6. **Tower Ladder Safety Device:** Literature describes a safety tower ladder device which locks within 7 inches of the spot where it is when the user slips or falls. For radio, television towers, derricks, high-line towers, etc. Safety Tower Ladder Co.

7. **Hand Pumps:** Bulletin illustrates sizes from 7 to 28 gallons-per-minute capacity for pumping lube, vegetable or paint oils, syrups, thinners, solvents, cutting and core

oils, and industrial liquids from drums, wheel tanks or underground storage. Other models also shown. Blackmer Pump Co.

8. **"Instant Communication":** Booklet discusses the use of two-way radio to those businesses using materials handling and emergency service equipments, and others who have plant protection problems. General Electric Co.

9. **"Carbon Monoxide Detector":** Bulletin No. 201 describes the detector, a precision instrument for detecting CO in physiologically significant concentrations. An improved hopcalite-type apparatus, it produces a sensitive analysis and continuous record of the concentration of the gas in the range of 0-5 parts per ten thousand. Teller & Cooper, Inc.

10. **Safety Shoes:** Colorful catalog features complete line of Guard-Aire and Rico Safety Shoes, showing numerous work and dress type styles. All shoes are dacron stitched. Also included is a complete line of rubber footwear for industrial use. Record Industrial Co.

11. **U. S. Electrical Motors:** Bulletin No. 1784 describes new totally-enclosed motors for hazardous services and non-hazardous services. Illustrates design features by both sectional and exterior views. U. S. Electrical Motors, Inc.

12. **X-Ray Accessories and Radiation Protection:** 72-page catalog has comprehensive sections on processing tank combinations, through the wall processing systems, special tanks, water coolers, darkroom accessories, etc. Many new developments in X-ray protection and nuclear activities, such as garments of lead glass fabric, radio-isotope fume hoods, laboratories, etc., included. Bar-Ray Products, Inc.

13. **Dust Control in Woodworking Plants:** Bulletin No. 382 shows how Dustube cloth-tube-type collectors are being used in industrial installations to improve plant house-keeping. Also illustrated is collected wood dust which can be channeled to the boilers and used for fuel. American Wheelabrator & Equipment Corp.

14. **"Mahon Industrial Equipment":** Booklet illustrates complete finishing systems for porcelain enamel, lacquer, paint, etc., spray dip or flow coating, cleaning and rust proofing equipment, drying and baking ovens; and hydro-foam dust collectors and fog filters. R. C. Mahon Co.

15. **Mastic Flooring:** Bulletin illustrates mastic flooring laid over new or worn concrete flooring in a continuous surface, without need for construction or expansion joints. Provides a non-skid surface. Bitucote Products.

16. **Dust Filters:** Bulletin No. 24-D shows how maker's dust filters can help solve tough dust-control problems. Describes principles of operation, benefits of use. Charts and photographs included. Ruemelin Mfg. Co.

17. **"Up-Right" Scaffolds:** Circular describes up-right scaffolds that are in one-piece sections and can be unfolded by one man in less than a minute. No tools, wing nuts or bolts. Up-Right Scaffolds.

18. **"Air-Supplied Hoods":** Bulletin describes the McDonald sand blast hood, blast foe abrasive hood, and the lead hood. Auxiliary air line equipment for hoods included. B. F. McDonald Co.

19. **"Correct Fire Protection":** A 26-page illustrated booklet which treats the different classes of fire, varying conditions of fire fighting, and the suitable equipment for each. Also described are anti-freeze extinguishers, floodlighting equipment, sirens, gas masks, artificial respiration units, uniforms and accessories. American-LaFrance-Foamite Corp.

20. **Grip-Strut Safety Grating:** Brochure describes floor grating and stair treads. Selection chart and suggestions included. Globe Co.

21. **Wright Speedway Hoist:** Literature describes the new trolley-mounted speedway hoist with capacities from 1/4 to 10 tons. Easily serviced by quick disassembly of parts or sections. American Chain & Cable Co.

NATIONAL SAFETY NEWS

425 N. MICHIGAN AVE., CHICAGO 11, ILLINOIS

FEBRUARY, 1953

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**"VICTORY" CAP
for all industrial jobs**

Better protection for all the hair all the time because the full, wide, snood-type back of the Kennedy "Victory" Cap permits complete coverage. Easy to put on. Adjustable to all head sizes. 11 styles to choose from.

Manufacturers and distributors of a complete line of safety clothing and equipment.

Write Dept. N-2 for information regarding your needs.

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Grip, Always Flat

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You can buy them in most orthopedic hospitals and drug stores or order direct.

65c a pair, postpaid

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Manufactured of high grade flexible rubber on the same principle as our popular ladder shoes which are used in all industries and a common sight on ladders of workmen in every city and town.

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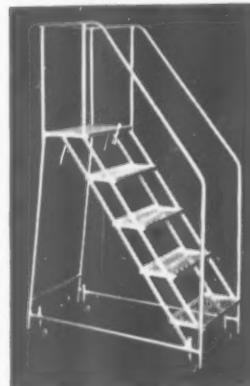


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NON-SKID STEPS

45"—5 Step

New improved design now being made from 1" diam. round furniture tubing.

Mounted on Swivel Brake Casters which allow the ladder to be rolled freely when no one is on it. When you step on the ladder the rubber cushioned legs rest on the floor and prevent rolling.

Made in 7 heights:—18" 2 Steps, 27" 3 Step, 36" 4 Step, 45" 5 Step, 54" 6 Step, 63" 7 Step, 72" 8 Step.

All are made in either 20" or 26" width.

Send for Circular No. 52-N and prices on these ladders and our full line of Wood Rolling Ladders.

Manufactured by

I. D. COTTERMAN

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COVER GOGGLES



● The new series 548 and 549 Cover Goggles by CESCO will fit comfortably over all popular styles of men's or women's glasses. A 20% increase in size over similar goggles permits clearance of even the modern extreme styles of personal glasses.

Newly designed, contoured edges eliminate pressure points on the nose. These curved, wide bearing surfaces also seal against the entrance of flying particles or light flashes. Larger air space within goggle reduces fogging.

Screw-type retaining rings permit quick lens change from front. Standard 50 mm lenses seat flush with rings to deflect flying objects. Chippers style has indirect ventilation through slotted lens rings and direct ventilation through perforated side shields. Welders and dust models have indirect ventilation through side shields.

Simplified buckle arrangement adjusts bridge width easily. Choice of 3 adjustable headbands: elastic, flat rubber, or Comfort King round rubber with no metal slides or buckles.

For a really modern goggle that will fit over a wide variety of glasses there is nothing better than the **No. 548 CESCO Cover Goggle**. It is "*Right...before your eyes!*"

**See or write your
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for full details**



New CESCO Cover Goggles fit well over all popular styles of glasses—even over extreme types such as these.

FEATURES



Lightweight, sturdy plastic
with contour edges.
Weight is well-distributed
for comfort and safety.



Round Rubber

HEADBANDS

Three types, all fully adjustable--Comfort King round rubber, flat rubber, or elastic.



Flat
Rubber
or
Elast.

LENS VENTILATORS

Slots in edges of lens frames and rings are offset to baffle air flow.



SIDE SHIELDS

Baffled type
for welders.



Perforated
for chipping
and grinding.



CESCO FOR SAFETY



AO
Respirators

Light **IN WEIGHT...**

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AO R9100 TYPE RESPIRATOR

The low cost of this BUREAU OF MINES APPROVED Respirator has always appealed in dusty operations where a soundly made respirator of simple construction is adequate.

The R9100 protects against *pneumoconiosis-producing* and nuisance dusts such as aluminum, borax, carbon, cement, charcoal, coke, flour, glass, grain, graphite, gypsum, limestone, pollen and wood. The companion respirator R9160T should be specified for protection against dusts that are not significantly more toxic than lead, such as barium, cadmium, lead arsenate, manganese and organic dusts—also for protection against DDT and insecticide sprays of similar potency. BUREAU OF MINES APPROVED numbers are BM 2137 and BM 2144 respectively. Your nearest AO Safety Products Representative can supply you.

QUICK FACTS

- Simply constructed of a smooth, rubber face mask and a corrugated permanent felt type filter, reinforced by wire frame.
- Easy to breathe in; non-reversing, low-resistant valve does not stick, is out of way. Easily replaceable.
- Lightweight (1½ oz.) for comfort. Soft rubber, smooth edges, self-adjusting double headband.
- Unobstructed vision—fits close to face, may be worn under helmet or with goggles.
- Easily cleaned—a shake, slap of the hand or light blast from air hose removes dust.

American Optical
COMPANY
SAFETY PRODUCTS DIVISION

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